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ABSTRACT

Six severely mentally retarded students (ages 9-16) were paired with six nonhandicapped fourth- and fifth-graders (Group 1) who received training to act as tutors during outdoor recess. Six of their nonhandicapped friends (Group 2) received no training. Group 3 consisted of all other fourth- and fifth-graders who were also present during the recess period. Social interaction data were collected for the nonhandicapped students on five dependent variables: active participation, social initiation, responding, teaching, and reinforcing. Three independent variables (social interaction training for Group 1, feedback, and followup) were systematically introduced during intervention. Results indicated that, as training progressed, the frequency of the trained behaviors for Group 1 substantially increased. Effects of training generalized to Group 2, and Group 3 showed an overall increase in social interactions with the handicapped students. It is suggested that training a few subjects could produce a generalization effect, and that unless the nonhandicapped children are trained, there will not be any high level of interaction between handicapped and nonhandicapped students. Appended are a student handbook for peers of handicapped students, an accompanying training guide for teachers or trainers, and a section on data collection procedures. (JW)

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TRAINING GENERALIZED SOCIAL INTERACTION BETWEEN SEVERELY HANDICAPPED AND NONHANDICAPPED STUDENTS IN REGULAR PUBLIC SCHOOL SETTINGS

FINAL REPORT

GRANT NUMBER: G008302161

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Student Research: Training Generalized
Social Interaction Between Severely Handicapped
and Nonhandicapped Students in Regular
Public School Settings

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INTRODUCTION

Litigation and social trends have led to legislative mandates (P.L. 94-142 and P.L. 93-112 - Rehabilitation Act) to educate children who are handicapped with those who are nonhandicapped to the maximum extent appropriate. Gilhool and Stutman (1978) stated that it was not the intent of these congressional mandates to simply take handicapped persons out of institutions and put them in segregated facilities operated by school systems. They stress that public schools should provide services for severely handicapped persons in a continuum of school settings that include regular classes and special classes located in regular school buildings.

The integration of severely handicapped persons into regular school programs is a growing movement in the United States. Sailor and Guess (1983) stress the integration of severely handicapped children when they state, "it is clearly time that most or all handicapped children coexist with age peers in regular education settings and that the state (as represented by individual school districts) bear the burden of proof when making placements or when applying treatments that involve partial or complete removal of handicapped children from regular schools" (p. 48).

Brown, Wilcox, Sontag, Vincent, Dodd, and Gruenewald (1977) advocate integrating the severely handicapped with nonhandicapped students. They pointed out some of the dis-

advantages of segregated service delivery models. The disadvantages include: (1) the handicapped children are not exposed to nonhandicapped students and vice versa; (2) severely handicapped students learn the skills, attitudes, and values of other handicapped children rather than nonhandicapped students; (3) teachers focus their attention on the problems of the handicapped at the expense of providing opportunities for them to develop and utilize social skills that will assist them in becoming integrated into the community; and (4) performance criteria are more likely to be based on the handicapped population as opposed to the nonhandicapped population.

Recently, research has emphasized the benefits that may be derived from integrating severely handicapped students with the nonhandicapped students. One major benefit from integration is that it provides the opportunity for meaningful interactions between severely handicapped and nonhandicapped students (Stainback & Stainback, 1980). The integration of severely handicapped students into regular school programs includes riding busses, attending assembly programs, eating lunch, playing together, as well as other incidental social interactions. However, research has shown that social interactions between the severely handicapped and nonhandicapped peers do not simply occur by physically integrating the severely handicapped into the schools but requires planning and systematic training of the individuals involved (Bricker, 1978; Stainback & Stainback, 1980;

Snyder, Apolloni, & Cooke, 1977; Guralnick, 1978).

There are several other benefits of integration. Integrating the severely handicapped into regular school programs may diminish attitudes of fear and mistrust and replace them with attitudes of acceptance and better understanding. When these nonhandicapped children become adults these experiences may facilitate better acceptance of severely handicapped individuals in the community and on the job. Rynders, Johnson, Johnson, and Schmidt (1980) and Egel, Richman, and Koegel (1981) pointed out another benefit, the opportunity for severely handicapped students to imitate the appropriate behaviors of nonhandicapped peers is greater when they are integrated. Snyder et al. (1977) and Ray (1974) suggested that imitation of the appropriate behavior of nonhandicapped students increases the severely handicapped students' repertoire of socially acceptable behaviors. Also, they stated that an increase in socially acceptable behaviors may reduce the stereotypic behavior that severely handicapped students exhibit. However, in spite of the benefits for integrating the severely handicapped, there are many problems associated with this trend as well. As mentioned above, merely placing severely handicapped students in the same physical school facilities as the nonhandicapped student does not ensure social interaction between the two groups of children. Guralnick (1980) studied the interaction that occurs between elementary age

severely handicapped students and nonhandicapped students. The results of that study showed that the nonhandicapped students and mildly handicapped students interacted more frequently with each other than was expected and that they interacted less frequently than was expected with moderately and severely handicapped students.

Stainback and Stainback (1981) reviewed research on the interaction and integration of severely handicapped and nonhandicapped students. They concluded that nonhandicapped students show a clear preference for interacting with other nonhandicapped students or mildly handicapped students, rather than with more severely handicapped students. The findings of these studies and others indicate that social interaction between the severely handicapped and nonhandicapped does not typically occur naturally, but requires systematic planning, structuring of the environment, and specialized training programs (Gottlieb & Davis, 1973; Snyder et al., 1977; Guralnick, 1978; Stainback & Stainback, 1982).

According to Stainback and Stainback (1982), the most common approach to increase social interaction between severely handicapped and nonhandicapped students is to provide social skills training to the handicapped students. Frequently this has been done by using peers to model appropriate behavior and reinforce the social behavior of the handicapped children (Apolloni, Cooke, & Cooke, 1977; Fredericks, Baldwin, Grove, Moore, Riggs, & Lyons, 1978;

Nordquist & Bradley, 1973; Ragland, Kerr, & Strain, 1978).

Nordquist (1978) and Stainback and Stainback (1982) suggest that another alternative to increase social interactions would be to train nonhandicapped students to interact (play) with severely handicapped students.

Several studies have used peers to assist handicapped students. Fourteen nonhandicapped students, attending a middle school, taught age-appropriate playground recreation skills to their moderately retarded peers (Donder & Nietupski, 1981). The students used modeling, shaping, chaining, and positive reinforcement to teach the fourteen and fifteen year old mentally retarded students to play kickball, baseball, catch, and frisbee. Fenrick and McDonnell (1980) trained four junior high school students to tutor severely handicapped students who ranged in age from 6 to 13 years old. The handicapped students were mentally retarded, had cerebral palsy, and exhibited self-stimulatory behaviors.

Gladstone and Sherman (1975) taught high school students to use verbal instructions, physical prompts, reinforcement, and to ignore inappropriate behavior while teaching institutionalized profoundly retarded children (ages 6 to 14) to follow simple directions. The high school students generalized their newly learned behavior modification skills to a second handicapped child and a different behavior. No interactions were reported by the author to

have occurred in settings other than the training environment, perhaps because the handicapped children were institutionalized and, thus, opportunities for interaction were minimal.

Peer tutors have taught a variety of skills to moderately and severely handicapped children, e.g., vocal imitation (Raver, Cooke, & Apolloni, 1978), free play behavior (Peck, Apolloni, Cooke, & Raver, 1978), and leisure time skills (Hill & Wehman, 1980). Mildly and moderately retarded students have also trained more severely handicapped persons to verbally and nonverbally imitate (Whalen & Henker, 1969), decrease inappropriate behaviors (Drabman & Spitalnik, 1973), and reinforce social responsiveness (Young & Kerr, 1979).

Ragland, Kerr, and Strain (1978) taught mildly handicapped peers to initiate positive social interactions with three elementary-age autistic students. As a result, the autistic children's social interaction increased, but did not maintain after the intervention was removed. Another study increased social behavior by having a mildly handicapped peer initiate (prompt) and reinforce social interactions (Strain, Kerr, & Ragland, 1979). Strain (1983) increased the positive social behavior of four autistic-like boys teaching a second grade nonhandicapped boy to use a social initiation intervention (invitations to play, sharing, physical assistance related to play). Strain (1983) also demonstrated that more social interaction occurred when

the four autistic students and the peer confederate were integrated with 24 nonhandicapped second grade students than when they were grouped with other autistic students and no nonhandicapped students except the peer confederate.

Severely handicapped children have only recently been integrated with nonhandicapped students in public school programs. Several authors have suggested that this integration will have positive effects on social interaction between severely handicapped and nonhandicapped students and recommend that nonhandicapped and mildly handicapped peers be used as behavior change agents (Nordquist, 1978; Stainback & Stainback, 1982; Strain, 1983).

Research on peer tutoring strongly supports their use in the education of severely handicapped children. However, additional research on the generalization of the use of peers is needed to determine if training some students can affect other students that have not received training.

Nordquist (1978) and Stainback and Stainback (1982) advocate that research be conducted to determine empirically whether training nonhandicapped students to prompt, to coach, to provide feedback to, and to reinforce severely handicapped students' socially acceptable behavior will be effective variables in reaching the goal of increasing social interaction between severely handicapped and nonhandicapped students. They further stress that such research should take place in normalized settings and should focus on

the maintenance of improved social interaction and generalization to nontraining conditions.

The purpose of this research project was to examine variables that could increase the social interactions between the severely handicapped and nonhandicapped students and facilitate generalization of social interactions to untrained students, nontraining settings, and maintain the interactions over time.

METHOD

Subjects

Handicapped students. Six severely intellectually handicapped (SIH) students, as classified in accordance with Utah State Rules and Regulations, participated in the study. There were two males and four females ranging in age from nine to sixteen. All of the students were ambulatory and had basic self help skills. See Table 1 for a more detailed analysis of the characteristics of the students.

Table 1

Child	Classifi- cation	Sex	Age	Comments
1	SIH	F	11	Very shy; Down's syndrome
2	SIH	F	15	Hearing impaired
3	SIH	M	11	Down's syndrome
4	SIH	F	16	Down's syndrome; withdrawn
5	SIH	F	13	Seizure disorder
6	SIH	M	9	Used Total Communi- cation; aggressive; Down's syndrome

Nonhandicapped Peers. The nonhandicapped peers were selected from a fourth and fifth grade classroom. The nonhandicapped participants were assigned to one of three groups. The first group consisted of six students that received training to act as tutors or PALs (Peers Assisting

Learning). They were asked to play with the handicapped students and were taught how to assist them in becoming more social. These six students are referred to as "PALs" throughout the paper.

The second group consisted of six close friends of the PALs. They received no training or assignments. These six students are referred to as "Friends." Group three, all other students in the fourth and fifth grade classes, were indirectly involved in the study. Their involvement consisted only of being at recess during the same time period as the handicapped students and, therefore, were potential playmates for the handicapped students, PALs, and Friends.

The fifth grade teacher had volunteered his class but had no other involvement in the study. Fifth grade students were selected by the following method. The fifth grade teacher kept a log of the students' names and tally marks received for discipline problems. The teacher selected the names with no marks and they were asked if they would like to participate. This continued on through the list until twelve people had volunteered. Two fourth grade students were selected by their teacher. From this list, a total of six PALs were randomly selected to receive training. After selection, the fourth and fifth grade teachers were then asked who were the preferred playmates of the six PALs. They generated a list of those students whom they thought were their closest friends. If the targeted "Friends" had not been previously asked to participate in the study, they

were approached and asked if they would like to participate. The "Friends" did not receive training but knew that they were part of the study. During the first week of the study, one PAL decided to withdraw from the study and he found his own replacement from within the same fifth grade classroom. Table 2 lists the characteristics of the nonhandicapped students.

Table 2

Student	Sex	Age	Grade	Class Rank*	Trained	Comments
PAL 1	F	10	5th	H	yes	Handicapped sibling
PAL 2	F	10	5th	H	yes	
PAL 3	M	10	5th	L	yes	
PAL 4	F	10	5th	AV	yes	Moved
PAL 5	F	9	4th	AVL	yes	Handicapped sibling
PAL 6	M	10	5th	H	yes	
Friend 1	F	10	5th	H	no	
Friend 2	F	10	5th	H	no	
Friend 3	M	9	4th	AV	no	
Friend 4	F	10	5th	H	no	
Friend 5	F	9	4th	HAV	no	
Friend 6	M	9	4th	AV	no	

H = High AV = Average L = Low

*Class rank refers to the subjective evaluation by the regular classroom teacher of how the student stood academically within the classroom.

All of the nonhandicapped and handicapped students had parental permission to participate in the study.

Setting

The study was conducted at an elementary school (K-6), Logan, Utah. All of the handicapped subjects were students in a self-contained classroom which was a mainstreaming project from the Developmental Center for Handicapped Persons (formerly the Exceptional Child Center). The classroom contained 9 students. Staff consisted of a teacher, one full-time aide, one part-time aide and a college work-study student (3 hours per day). Support personnel included a speech/language pathologist, an adaptive PE specialist, an occupational therapist, and a behavior specialist/psychologist. However, only the teacher had any involvement in the study.

The fourth and fifth grade classrooms were located in the same area of the building as the classroom for the handicapped students. The fourth grade students were in a class of approximately 30 students. The fifth grade students were in a class of approximately 24 students. Each classroom was staffed by one teacher.

The classroom for the handicapped students was used for training the nonhandicapped peers. It was 8m by 12m. There were no windows in the room. It contained a small home living area and kitchen area. One area of the room was devoted to prevocational skills. The rest of the room was

open and used for various academic and language programming.

The play sessions were held on the playground which was adjacent to the school building. Both handicapped and non-handicapped students returned to the handicapped classroom after lunch. They played there informally until the observers arrived. At that point everyone went outside. The teacher from the handicapped classroom supervised both the handicapped and nonhandicapped students during the lunch recess.

The playground consisted of several large playing fields where teams could play football, softball, or kickball. There was also an asphalt area with basketball standards. Playground equipment consisted of a "Big Toy" (giant playground equipment structure made from large timbers surrounded by sand), swings, horizontal bars, slides, and monkey bars. The students had access to assorted balls and jump ropes. During inclement weather the students played together in an activity room located in the basement of the school. The activity room was 20m by 24m. The students had access to mats for gymnastics, yarn or nerf balls, and jump ropes.

The play session was from 12:30 to 1:00 p.m. During that time, third and fourth grade students were on the playground until 12:45 p.m. Fifth and sixth grade students were on the playground the entire recess time. Approximately 100 to 250 students, including the participants in the study, were on the playground. When the play sessions were

conducted in the activity room, approximately 75 students, including the participants in the study, were present. The four fourth grade students who were involved in the study had received permission to remain at recess until 1:00 p.m.

Procedures

Dependent variables. Data were collected on five dependent variables in order to investigate the process of social interactions between handicapped children and nonhandicapped peers. The dependent variables were operationally defined to facilitate detailed observation of the social interaction patterns that occurred. They are described as follows.

Active participation. Active participation was defined as an appropriate way to play with a friend or participate in a game. For example, an active participation occurred if a PAL, Friend, or other peer called to the handicapped child to play ball with the group, the peer threw the ball to the child, and the child threw the ball back. Active participation took place between PALs, Friends, handicapped children, or other peers. The percent of time that PALs, Friends, or other peers actively participated with the handicapped students was the primary dependent variable and was presented as the "percent of social interaction."

In order for the observers to discriminate active participation, passive participation and solitary play were also defined. During passive participation, the child

affirms the initiation but stands aside observing the group while orienting his head in the direction of the action. Using the ball example, the child would respond, "Okay," stand on the sideline, but never actually participate. If the child played alone approximately five or more feet away from the group and ignored his/her peers, that was referred to as solitary play. For example, if a child sat on the ground, made designs in the dirt, or stacked rocks and did not interact with any other peers, she would be engaged in solitary play.

Data were collected on active participation. The other two behaviors were identified as nonexamples of the target behavior. Data were not collected on passive participation or solitary play. Data were also collected on four additional behaviors: (1) social initiation, (2) responding to initiation, (3) teaching, and (4) reinforcing. These behaviors were taught to the PALs during training.

Social initiation. A social initiation was defined as any verbal or nonverbal response which began a social interaction. Social initiations occurred between all types of participants. An example of a social initiation might be the gestural wave of an arm indicating "come with me" or a more specific verbal response, "John, let's go play."

Responding to initiations. Responding to initiations followed a social initiation. The targeted student could reciprocate by either agreeing or disagreeing to partici-

pate. Continuing our example, John would go play with the peer or decline.

Teaching. Teaching was a battery of behaviors which the nonhandicapped peer used to show the handicapped child how to participate in a game or activity. Teaching included modeling or demonstrating, prompting, and shaping techniques. Prompting could include verbal explanations as well as physical prompts. Physical prompts ranged from slight guidance to total manipulation. A good example of this behavior occurred when a peer stood behind the child and physically assisted him to hold the bat and swing at the ball.

Reinforcing. Reinforcing was defined as any positive response, either verbal or nonverbal, that the participants delivered to one another. It should be noted that data were not collected on whether the reinforcing increased the behavior which it followed. Rather, it is more synonymous with positive praise. For example, "Good job, Bobby" or a nonverbal compliment such as a hug were considered reinforcing.

Data Collection

Five university students served as observers during the study. Three of the observers were not connected with the Special Education Department. One observer was an undergraduate special education major and one observer was a graduate student in special education. Training was con-

ducted during a 2-hour session for 15 days. (See Appendix C for an Observer Training Manual.) In addition to the initial training, observers also received four 30-minute booster training sessions to prevent observer drift. Booster training sessions occurred at various times throughout the course of the study.

Observer training consisted of instruction, role-playing, and practice in recording data. First the observers learned the definitions of targeted behaviors and the coding system used on the data sheets. Next the observers role-played examples and nonexamples of behaviors that could be expected from the students. Then they watched a prerecorded videotape of students interacting on the playground and practiced recording data. Finally, they observed live interactions between handicapped and nonhandicapped students at an elementary school not used in the study. During training, the experimenter conducted interobserver reliability checks and provided feedback to the observers as needed. Prior to commencing the study, observers obtained interobserver agreement of 80% to 100%.

During baseline and treatment phases, each observer was assigned to collect data on three students. This group of students included one handicapped child, the PAL that was assigned to that child, and the Friend who was yoked to the PAL. Observer assignments were rotated daily so that an observer did not observe the same group of students on consecutive days. It was also possible for the observer to

collect data on students who were not in the assigned group. The observer did this by coding a category that indicated participation by any other student who interacted with the assigned group.

Social interaction data were collected using a whole-interval scoring technique. Active participation was recorded when the students interacted for the entire 10-second interval. Any activity that started in the middle of the interval or finished before the end of the interval was not recorded. Observers watched for a 10-second interval and recorded during the next 5-second interval. Signals were received from a prerecorded cassette tape via a portable cassette tape recorder and an earphone. A voice on the tape announced the beginning and end of each interval. Data were collected daily for 15 minutes during the 30-minute lunch recess period.

The nature of the study required an observation form that would be sensitive to all of the dependent variables. A complex observation form was developed and field tested for three months in two schools prior to the study. The observation form consisted of seven 10-second blocks for the "active participation" section and sixteen 10-second blocks for the "frequency" section. Both sections contained four categories (see Figure 1).

Frequency data were collected on (1) social initiation, (2) responding to initiations, (3) teaching, and (4) rein-

OBSERVATION FORM

Observer: _____ Date: _____
 School: _____ Condition: _____
 Time: Stop _____ Start _____ * _____ Total _____

Students	ACTIVE PARTICIPATION				FREQUENCY			
	Hand. Tar.	Hand. NonT.	NonH. Tar.	NonH. NonT.	Init	Resp	Teach	Reinf
10 sec.								
1. Hand.T								
2. NonH.T								
3. NonHTar								
4. Other NonH.								
20 sec.								
1. Hand.T								
2. NonH.T								
3. NonHTar								
4. Other NonH.								
30 sec.								
1. Hand.T								
2. NonH.T								
3. NonHTar								
4. Other NonH.								
40 sec.								
1. Hand.T								
2. NonH.T								
3. NonHTar								
4. Other NonH.								
50 sec.								
1. Hand.T								
2. NonH.T								
3. NonHTar								
4. Other NonH.								
60 sec.								
1. Hand.T								
2. NonH.T								
3. NonHTar								
4. Other NonH.								

Students	ACTIVE PARTICIPATION				FREQUENCY			
	Hand. Tar.	Hand. NonT.	NonH. Tar.	NonH. NonT.	Init	Resp	Teach	Reinf
10 sec.								
1. Hand.T								
2. NonH.T								
3. NonHTar								
4. Other NonH.								
20 sec.								
1. Hand.T								
2. NonH.T								
3. NonHTar								
4. Other NonH.								
30 sec.								
1. Hand.T								
2. NonH.T								
3. NonHTar								
4. Other NonH.								
40 sec.								
1. Hand.T								
2. NonH.T								
3. NonHTar								
4. Other NonH.								
50 sec.								
1. Hand.T								
2. NonH.T								
3. NonHTar								
4. Other NonH.								
60 sec.								
1. Hand.T								
2. NonH.T								
3. NonHTar								
4. Other NonH.								

Figure 1. Observation Form.

forcing by students. The number of times each student performed a targeted behavior (e.g., teaching) was recorded in the "frequency" section immediately after it was observed. For example, if the Friend responded three times to different children's initiations within the 10-second interval, the observer immediately recorded three tallies in the response box. Immediately following the 15-minute observation period, the observers and the graduate assistant summarized the data and entered it on the summary form. (See Figure 1 for an example of the data form.)

Experimental Design

The research design was a multiple-baseline across pairs of students (Kazdin, 1982). The design provided for an analysis of the functional relationship between treatment implementation and behavioral changes. Three independent variables, (1) social interaction training for PALs, (2) feedback, and (3) follow-up, were systematically introduced during the intervention phases.

Baseline. Prior to baseline, a PAL and a handicapped child were paired. Within the classroom for the handicapped the PALs were told to play with that handicapped child and to ask their friends to join them. After instructions, all of the students went outside. Baseline data were collected during the regularly scheduled 30-minute lunch recess.

Phase I (Training). The special education teacher and a graduate student in special education trained the PALs in

pairs. The PALs were trained to initiate, to respond to initiation, to teach, and to reinforce the handicapped children. (For a detailed explanation of the training procedures, see Appendix B.) The training took place in the classroom for the handicapped students from approximately 11:30 a.m. to 11:45 a.m. on a daily basis for at least 10 days.

When training was completed, verbal instructions were given to the PALs just prior to going outside for recess. These instructions were prompts to remember what they had learned in training. The PALs were also instructed not to specifically tell the other PALs what they had learned during training. After the recess period the teachers took the PALs aside and provided feedback on their performance. When data were stable for the first pair of PALs, the next pair of PALs were given training as specified by the multiple baseline design.

Phase II (Feedback). During this phase, the PALs were given specific feedback on their performance with their assigned child, but did not participate in any formal training. No instructions were given to the PAL prior to the start of the recess. The two trainers were responsible for providing the feedback. The trainers praised the use of appropriate teaching techniques. In addition, the trainers and experimenter praised PALs for playing with the handicapped students.

Generalization. The lunch recess was used to assess whether the trained behavior generalized from PALs to Friends and/or other nonhandicapped students. Data were collected in this setting throughout all phases of the study. If social interactions between PALs and the handicapped students had not generalized to nonhandicapped peers, then prompting and reinforcement would have been introduced. Generalization of the teaching behaviors, taught to the six PALs from training to recess, was also examined. If it had not occurred, a more direct training procedure would have been implemented on the playground.

Follow-up. Upon completion of the experiment, direct intervention was withdrawn. After a time delay of four days, maintenance probes were conducted every other day for two weeks. A longer time delay would have been better, but the school had many end-of-year activities which would have affected student behaviors. If the increased social interactions had not maintained, booster training sessions would have been used to reestablish social interaction.

Interobserver reliability. Interobserver reliability checks were conducted periodically throughout the study. Reliability scores were calculated separately by interval for occurrence and nonoccurrence (Hawkins & Dotson, 1975). Agreement on occurrence was calculated by dividing the number of intervals in which there was an agreement that a behavior had occurred by the total number of agreement and disagreement intervals and multiplying by 100.

$$\frac{\text{agreement of occurrence}}{\text{agreement and disagreement of occurrence}} \times 100 = \% \text{ agreement}$$

Nonoccurrence agreement was calculated by dividing the total number of intervals in which there was an agreement that a behavior did not occur by the total number of agreement and disagreement intervals and multiplying by 100.

$$\frac{\text{agreement of nonoccurrence}}{\text{agreement and disagreement of occurrence}} \times 100 = \% \text{ agreement}$$

The mean of these two scores was then computed by adding the two coefficients and dividing by two.

$$\frac{\% \text{ average occurrence} + \% \text{ average nonoccurrence}}{2} = \text{mean } \% \text{ agreement}$$

Interobserver reliability ranged from .89 to 1.00 with a mean of .91.

Results

Figures 1 and 2 show the percent of appropriate social interaction for the six handicapped students and the six PALs. During baseline the percent of social interaction between the children and their PALs is generally low, but increased almost immediately when the training phase was introduced.

Child 1/PAL 1. Figure 1 (a) shows the data for Child 1 and PAL 1. During baseline, the data were highly variable with a mean of 26%. When the PAL received training, the level of the data points gradually increased with a mean of 50%. Though there are few overlapping data points between baseline and training phases, the training data have a sharp upward trend with a mean almost twice that of the baseline. Data for the feedback phase were relatively stable with a mean of 73%. There are no overlapping data points between the feedback and baseline. Likewise, there are no overlapping data between follow-up and baseline. The follow-up data show a drop in performance, but the mean of 71% is considerably higher than the mean for the baseline.

Child 2/PAL 2. The data for Child 2 and PAL 2 are shown in Figure 1 (b). The baseline data were variable; the data points ranged from zero to 36% with a mean of 12%. During the training phase, the level of data increased very dramatically to 82% with a mean of 63% and remained high throughout the study. In addition, the data points were

more stable than the baseline and the feedback data. Although the training data points overlapped with the feedback and follow-up data points, there was no overlap with the baseline. When the feedback phase was in effect, the data points were also higher than the baseline, with a mean of 68%. The follow-up phase had fewer data points but was high and stable with a mean of 84%.

Child 3/PAL 3. Figure 1 (c) displays the data for Child 3 and PAL 3. During baseline, the behavior was almost zero except three data points. The*baseline mean was 2%. When the PAL was trained, the behavior gradually improved with a sharp upward trend; the mean was 67%. It was not possible to conduct the feedback and follow-up phases before the study was terminated.

Child 4/PAL 4. Figure 2 (a) shows the data for Child 4 and PAL 4. Baseline behavior was at a mean of 1%. When the PAL was trained, the percent of social interaction increased dramatically; the mean was 58%. During the feedback phase, the percentage of interaction remained high with a mean of 63%. There were no overlapping data points between the training and baseline phases. It was not possible to carry out the follow-up phase before the student moved to another state.

Child 5/PAL 5. Figure 2 (b) displays the data for Child 5 and PAL 5. During baseline, the first three days' data points were high but with a sharp downward trend which leveled off at zero. When training was instituted, the

behavior improved with a gradual upward trend that peaked at 100% and a mean of 41%. There was minimal overlap in data between baseline and training. During the feedback phase, the level of interaction remained high, with a mean of 73%. The follow-up data points were also high, with a mean of 89%. Except for five days in the training phase, the data in the training, feedback, and follow-up phases did not overlap with the baseline data.

Child 6/PAL 6. Figure 2 (c) shows the percent of interaction between Child 6 and PAL 6. During baseline, the data points were variable with a mean of 12%. When the PAL was trained, social interactions increased; the mean was 50%. The level of interaction dropped during the feedback phase, but was higher than baseline; the mean was 47%.

Figures 3 and 4 display the percentage of appropriate interaction between the Friends and the severely handicapped students that participated in the study. During baseline, the percent of interaction was low but when the PALs were trained, the percent of social interaction increased sharply for the Friends as well as the PALs, showing generalization.

Friend 1/Child 1. Figure 3 (a) presents the data for Friend 1 and Child 1. Data for the baseline were low with a mean of 4%. When PAL 1 was trained, the data for Friend 1 increased; the mean was 35%. During the feedback phase for PAL 1, the Friend's data dropped slightly; the mean was 22%. Only three out of thirteen data points in the training phase

that overlapped with baseline data points in the feedback phase overlapped with baseline.

Friend 2/Child 2. Figure 3 (b) shows the data for Friend 2 and Child 2. The baseline data varied between 0% and 40%, with a mean of 7%. During training for PAL 2, the percentage of interaction between Friend 2 and Child 2 increased dramatically; the mean for the phase was 50%. During the feedback phase, the level of interaction gradually dropped, was more variable, and had a mean of 42%. Interaction increased again during follow-up; the mean was 54%.

Friend 3/Child 3. Figure 3 (c) displays the data for Friend 3 and Child 3. During the baseline the percentage of interaction was zero. When PAL 3 was trained the percentage of social interaction increased slightly; the mean increased to 12%. During the feedback phase the mean increased to 38% because of two days of high social interaction. It was not possible to conduct the follow-up before the study ended.

Child 4/Friend 4. Figure 4 (a) shows the data for Child 4 and Friend 4. During baseline, the behavior was low with a mean of 0%. When PAL 4 was trained, the percent of social interaction between Child 4 and Friend 4 gradually increased; the mean was 8%. The feedback phase produced the greatest increase in interaction with a mean of 44%. It was not possible to carry out the follow-up with these two students because Child 4 became ill and missed several days of school.

Child 5/Friend 5. Figure 4 (b) shows the percent of social interaction between Child 5 and Friend 5. During the baseline, the level of interaction was low with a mean of 0%. Social interaction increased dramatically after PAL 5 was trained; the phase mean was 24%. In the feedback phase, the percent of interaction continued to increase; the phase mean was 60%, without any overlapping data points between baseline and the feedback phase. The follow-up phase also resulted in a high percent of social interaction with a phase mean of 87%.

Child 6/Friend 6. Figure 4 (c) presents the data for Child 6 and Friend 6. The percent of social interaction between Friend 6 and Child 6 was low for all phases. Inadvertently, a fourth grade student and a fifth grade student that were not acquainted with one another were matched as being close friends; this error probably accounts for the lack of generalization.

Children/Other Students. Figures 5 and 6 show the percent of social interaction between the six severely handicapped students that participated in the study and all other fourth and fifth grade students that were on the playground or in the activity room during recess. The data are more variable than those for PALs and Friends but show an overall increase in active participation after PALs had received training.

PALs/Other Severely Handicapped Students. Figures 7 and 8 show the percent of social interaction between the PALs and all other severely handicapped students sharing the same recess period (excluding the child they were paired with). The data reveal that the PALs did not play with other severely handicapped students as much as the one they were paired with. However, the training and feedback did result in some increase in social interaction, with the exception of PAL 3.

Tutoring data. Table 3 presents the data on (1) initiation, (2) response to initiations, (3) peer teaching, and (4) peer reinforcement. The means of these behaviors (initiating, responding, teaching, and reinforcing) are presented for each phase. During baseline, all the subjects except the handicapped child had very low means. When treatment was introduced, the frequency increased.

PALs. Data show that all six PALs increased the frequency of the social initiations and tutoring behaviors once they were trained. There was an increase between the baseline and the training phases for initiation, teaching, and reinforcing behavior. Interestingly, during training, the frequency of responding dropped for four of the six PALs. Also, the frequency of initiating dropped for the handicapped children.

Friends. Table 3 also shows that during training, except for two of the Friends, the frequency of social initiation increased and, except for one Friend, teaching

and reinforcement increased.

Severely handicapped children. The data for the handicapped children show that throughout the study their frequency of initiating and responding was higher than the rest of the subjects. As expected in the pattern of their behavior, frequency of teaching and reinforcing was zero.

Social validation data were collected by asking the PALs and Friends and their parents to respond to the questions during a post-study interview. The responses for PALs and Friends are summarized in Tables 4 and 5, respectively. Data indicate that most of the nonhandicapped children enjoyed the experience and would like to participate further in the future.

Tables 6, 7, and 8 are summaries of the responses from parents of the severely handicapped students, PALs, and Friends. The parents believed that the program was positive and should be continued.

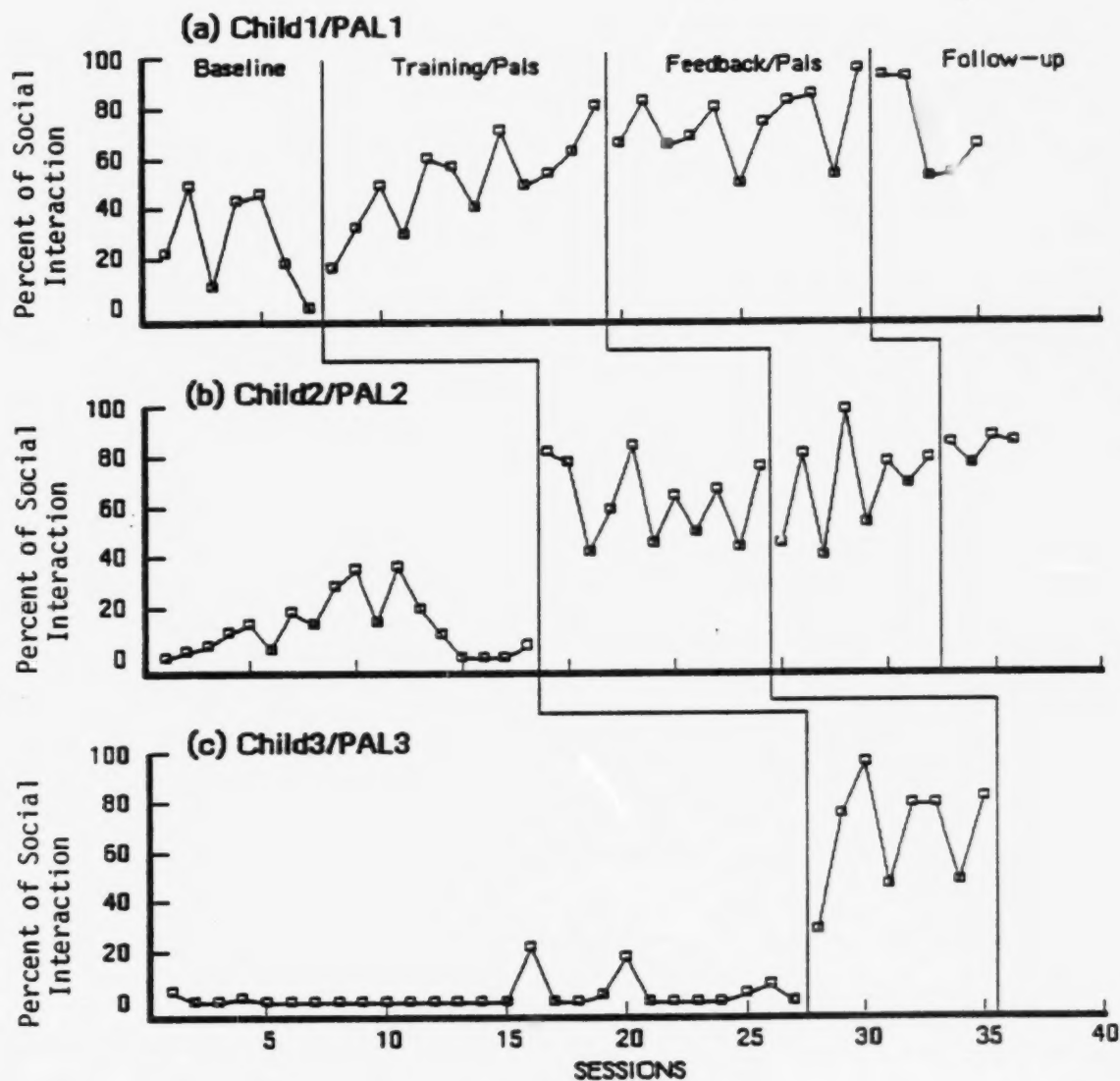


Figure 1

Percent of 10-second intervals that severely handicapped children and PALs were engaged in social interaction.

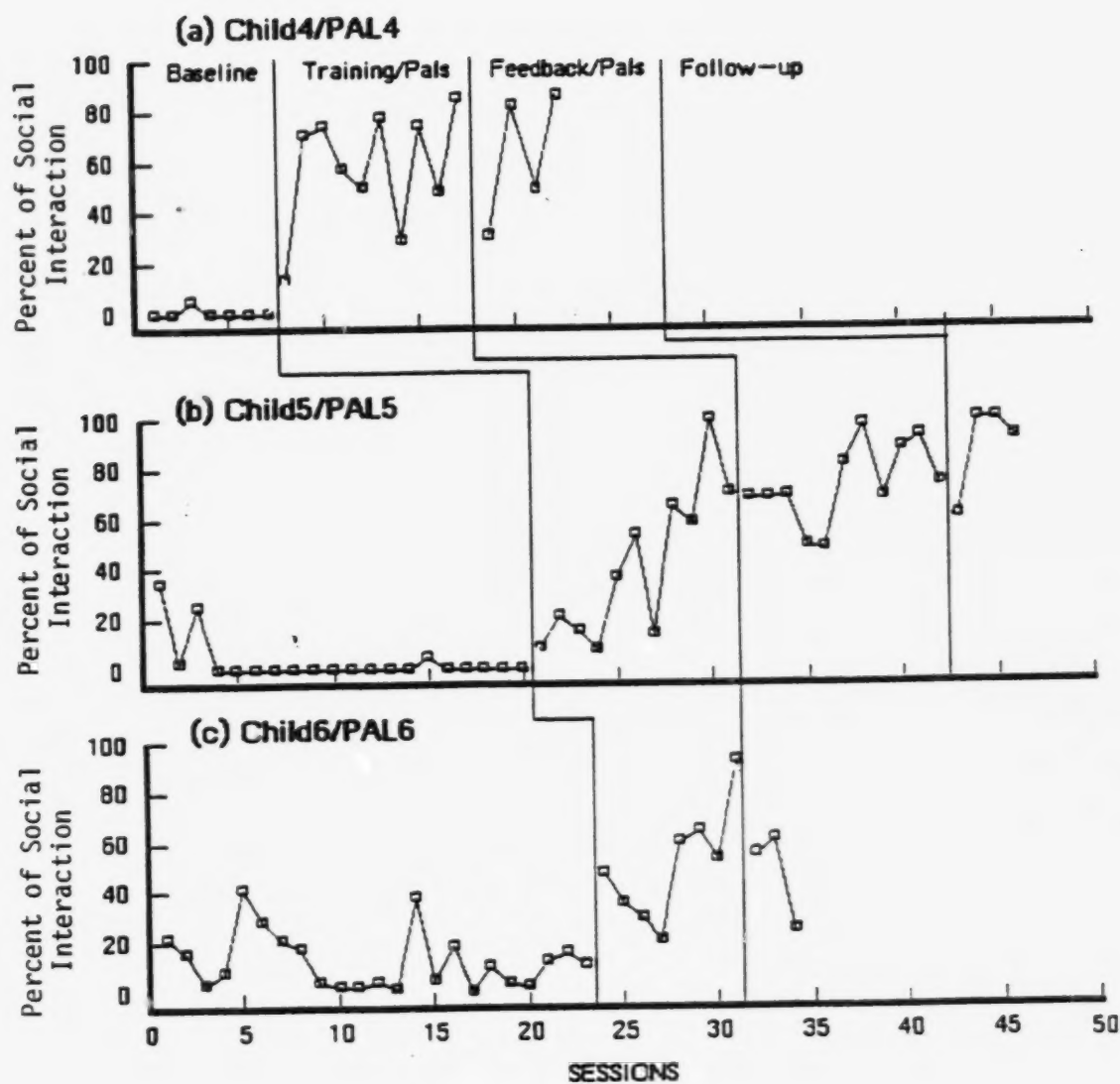


Figure 2

Percent of 10-second intervals that severely handicapped children and PALs were engaged in social interaction.

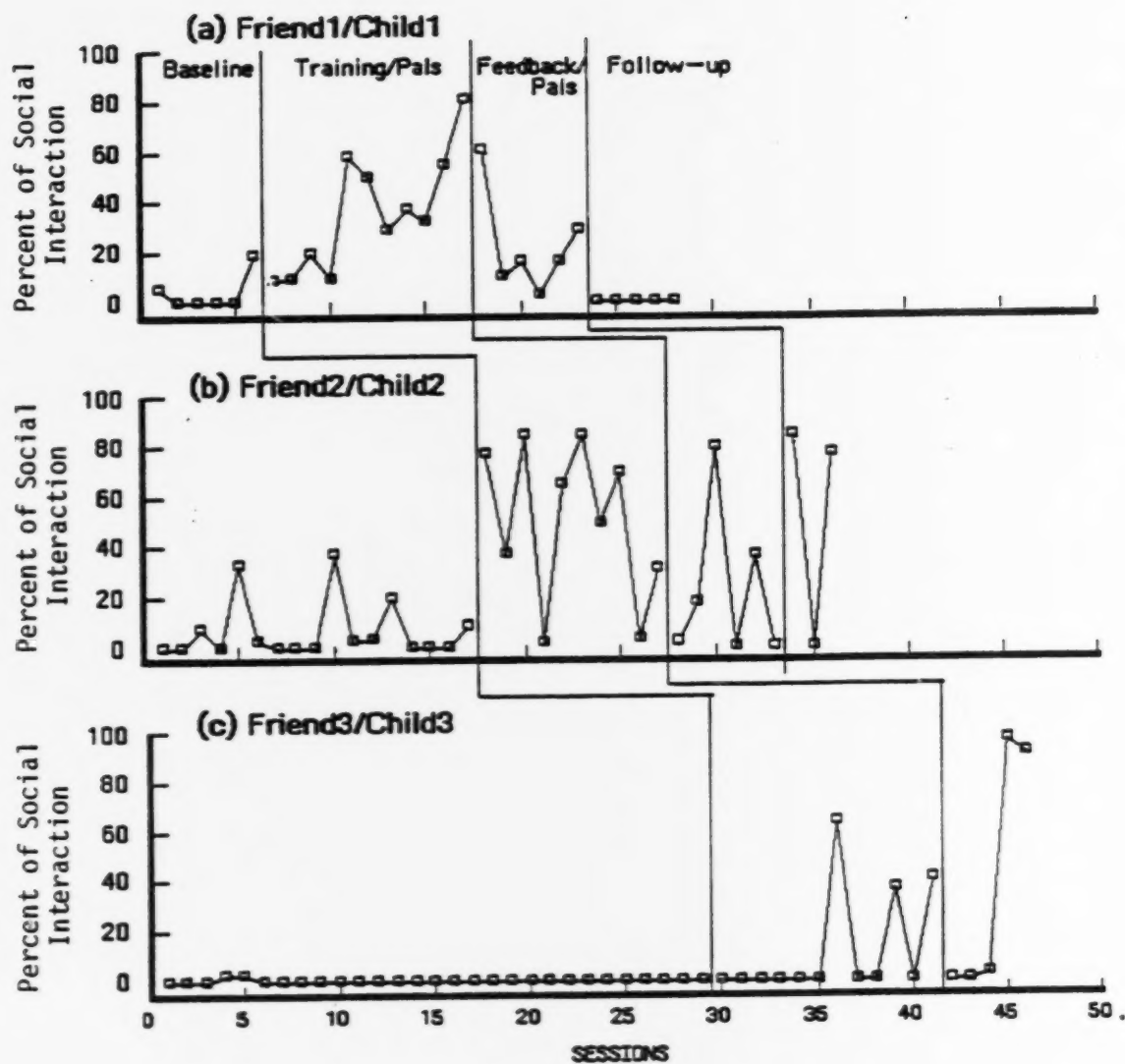


Figure 3

Percent of 10-second intervals that friends and severely handicapped children were engaged in social interaction.

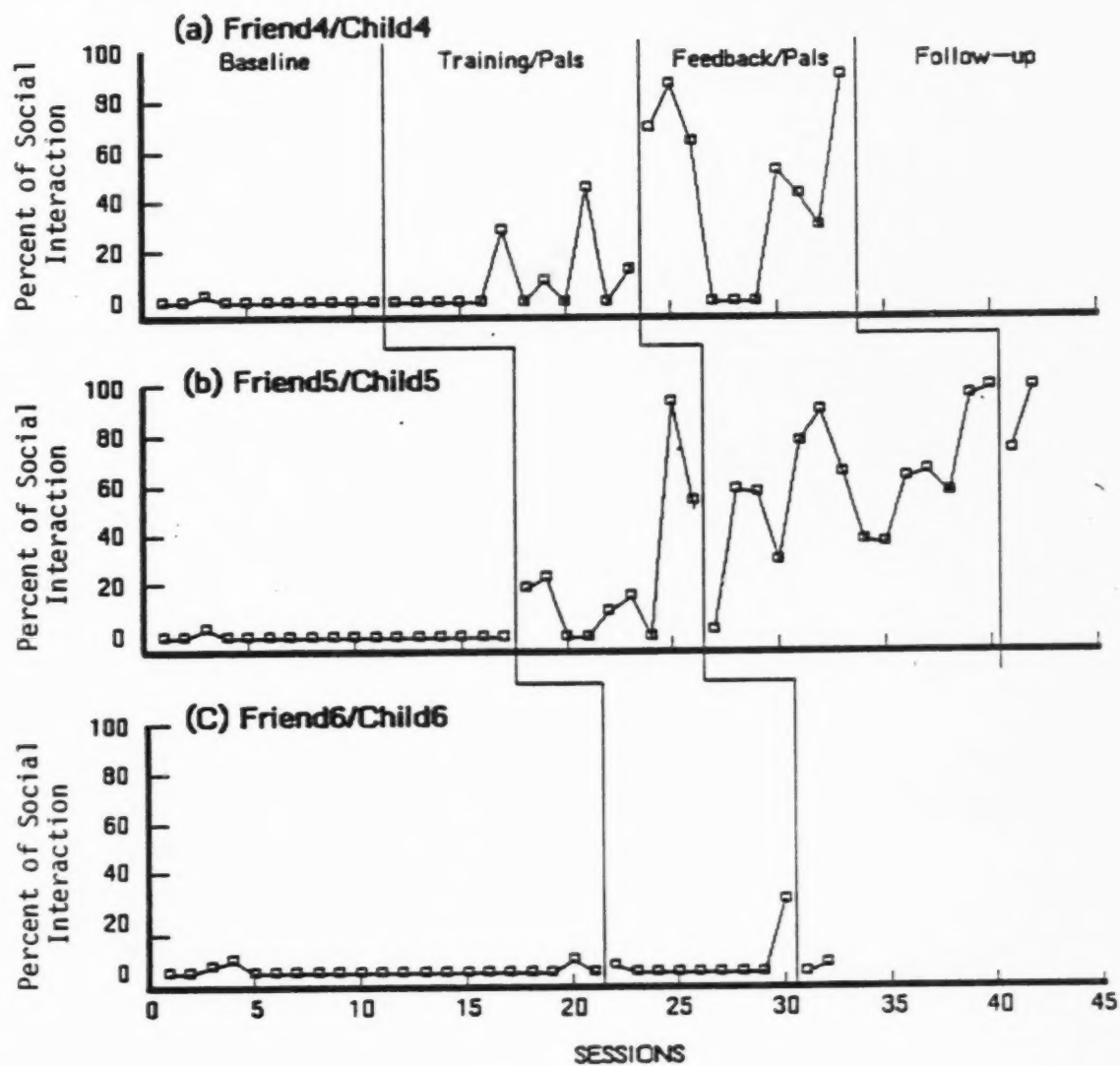


Figure 4

Percent of 10-second intervals that friends and severely handicapped children were engaged in social interaction.

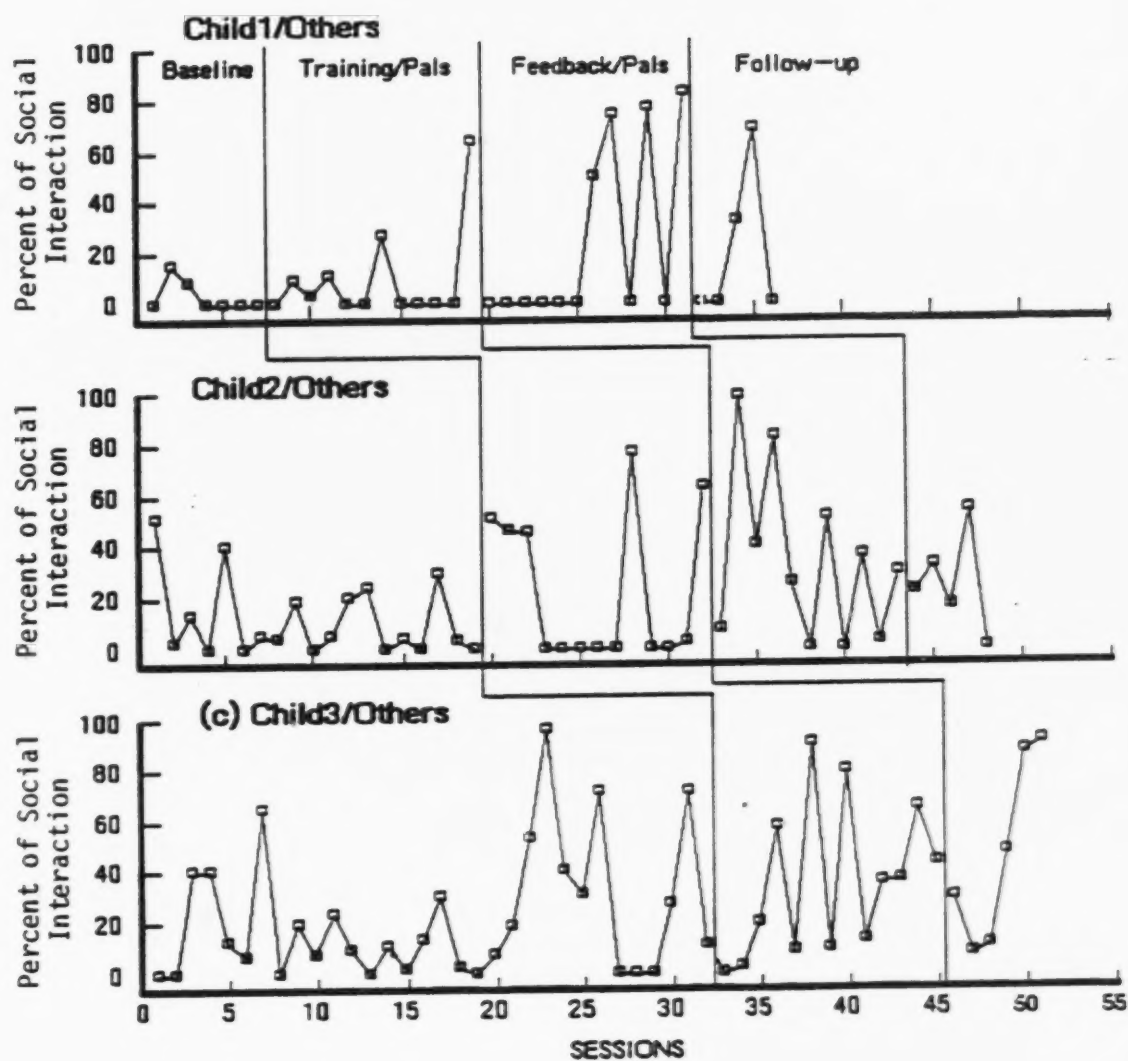


Figure 5

Percent of 10-second intervals that severely handicapped children and other nonhandicapped children were engaged in social interaction.

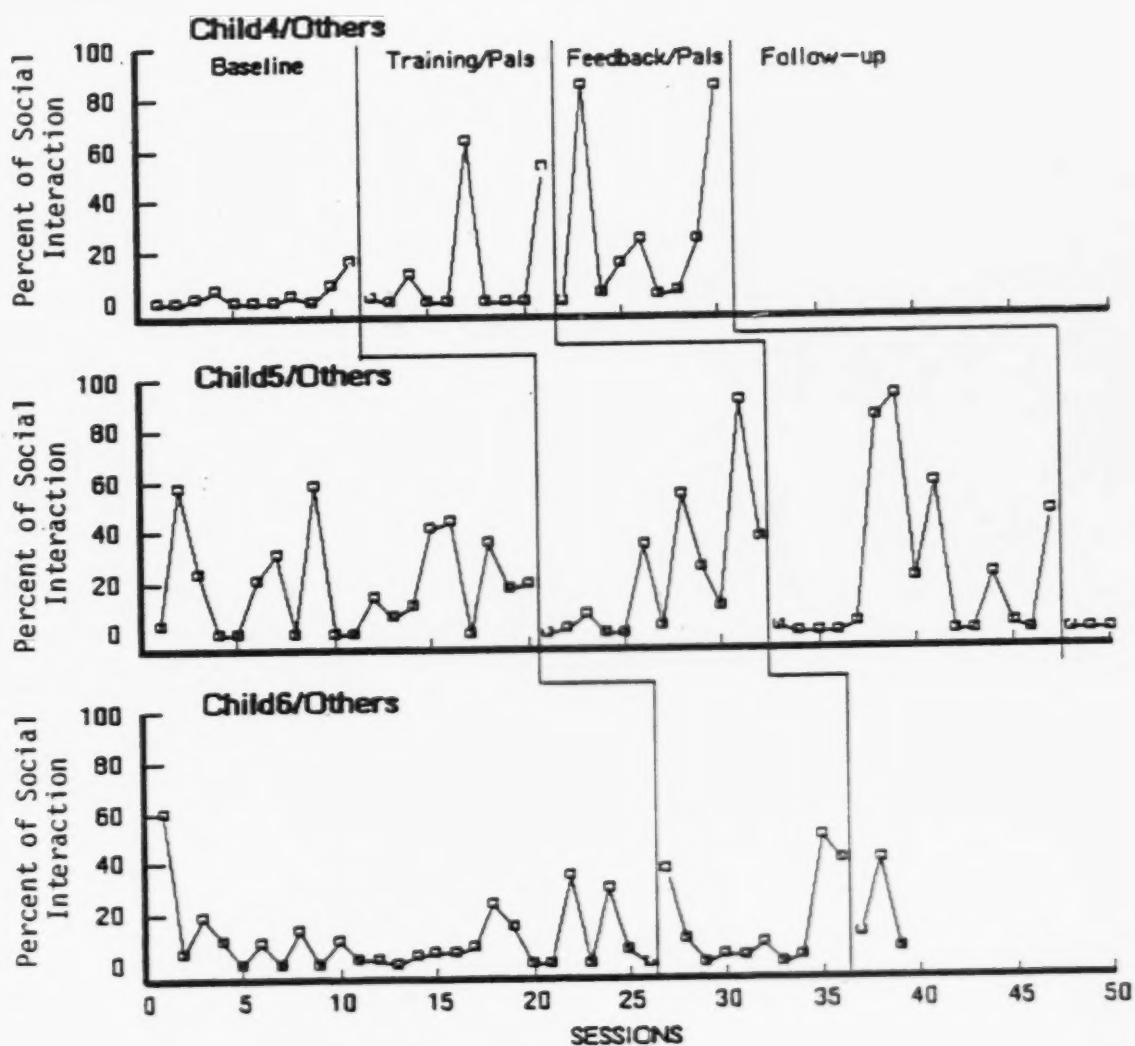


Figure 6

Percent of 10-second intervals that severely handicapped children and other nonhandicapped children were engaged in social interaction.

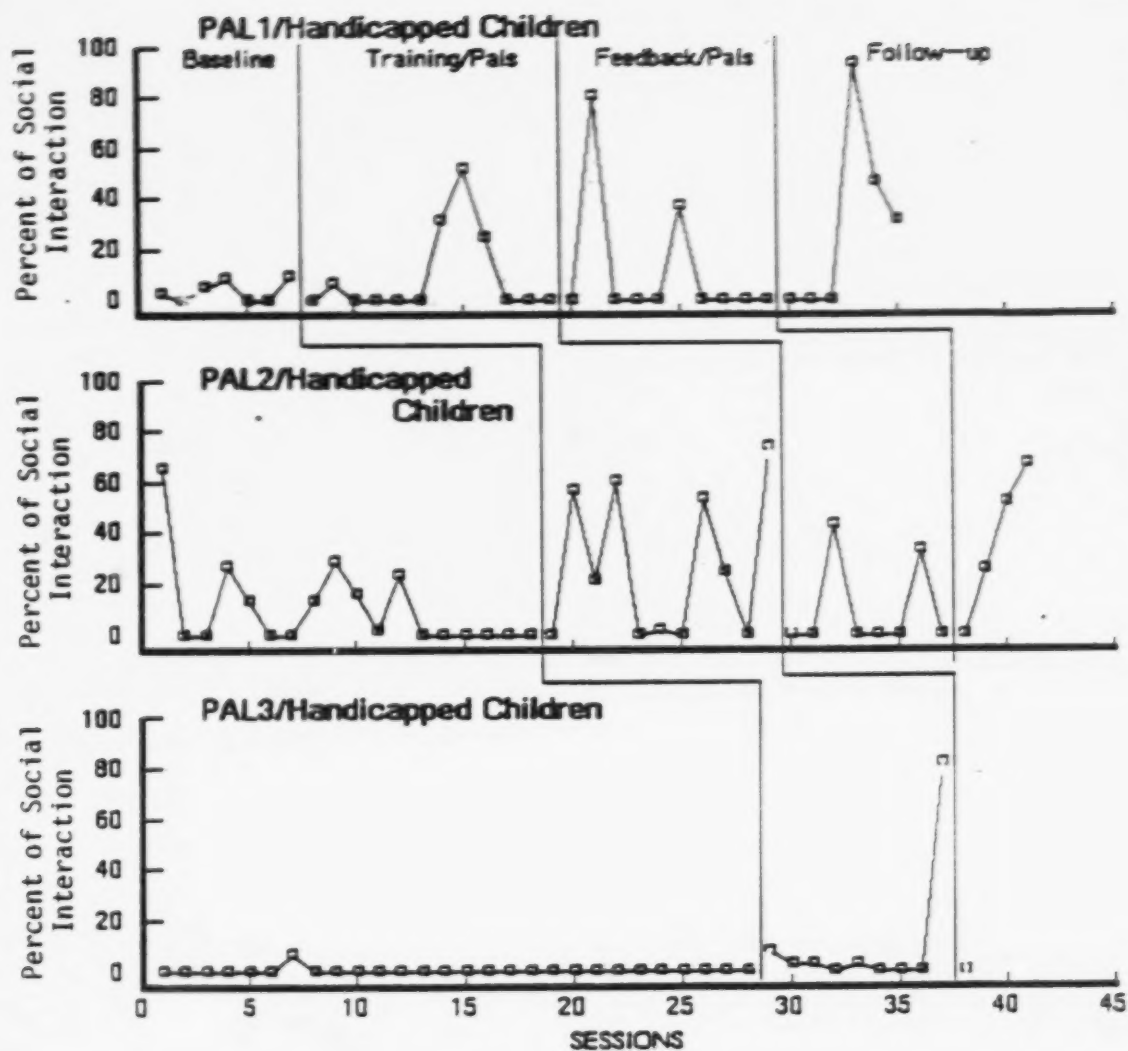


Figure 7

Percent of 10-second intervals that PALs and other handicapped children were engaged in social interaction.

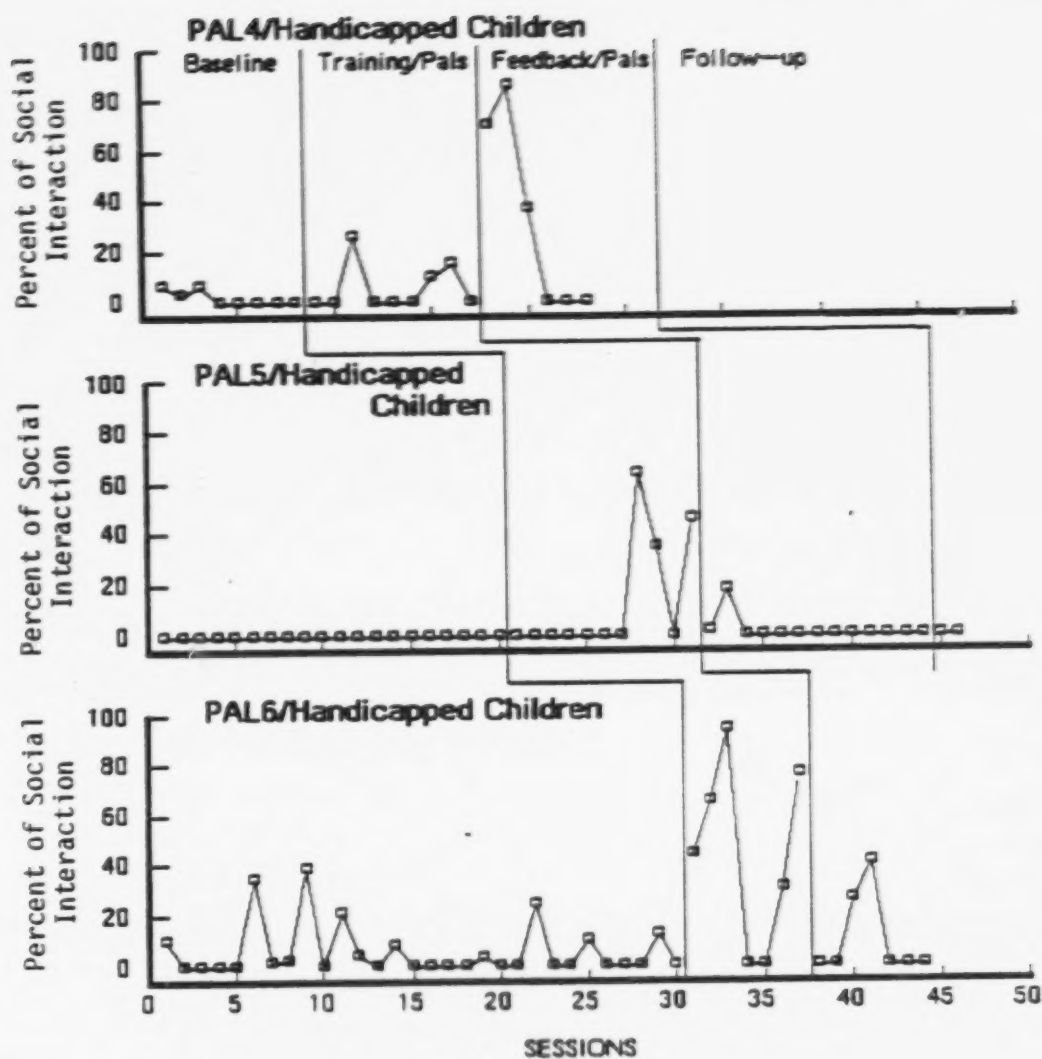


Figure 8

Percent of 10-second intervals that PALs and other handicapped children were engaged in social interaction.

Table 3

Mean Frequency for Tutoring Skills

<u>Subject</u>	<u>Phase</u>	<u>Day</u>	<u>Init</u>	<u>Resp</u>	<u>Teach</u>	<u>Reinf</u>
PAL 1	Baseline	7	4.00	4.57	0.43	0.00
	Training	12	6.17	1.67	3.50	4.33
	Feedback	11	3.50	1.40	3.70	3.40
	Follow-up	5	4.80	1.20	2.80	3.00
Friend 1	Baseline	7	1.43	0.43	1.00	0.43
	Training	12	4.73	0.64	2.91	2.27
	Feedback	11	1.00	0.20	1.80	0.80
	Follow-up	5	----	----	----	----
Child 1	Baseline	7	7.70	6.00	0.14	0.00
	Training	12	6.58	8.17	0.00	0.00
	Feedback	11	1.90	3.18	0.00	0.09
	Follow-up	5	2.40	4.80	1.00	0.00

PAL 2	Baseline	18	3.47	3.00	0.41	0.12
	Training	11	5.36	1.82	6.91	4.64
	Feedback	8	5.13	1.63	4.50	1.63
	Follow-up	4	5.75	1.25	3.75	1.30
Friend 2	Baseline	18	1.94	0.77	0.47	0.06
	Training	11	0.73	0.00	0.55	0.73
	Feedback	8	0.50	0.38	0.13	0.25
	Follow-up	4	0.25	0.00	0.00	0.00
Child 2	Baseline	18	5.17	5.67	0.00	0.00
	Training	11	2.64	4.00	0.09	0.18
	Feedback	8	2.88	4.36	0.13	0.27
	Follow-up	4	2.25	5.75	0.00	1.44

Means of trained behavior for each phase.

Table 3 (cont.)

<u>Subject</u>	<u>Phase</u>	<u>Day</u>	<u>Init</u>	<u>Resp</u>	<u>Teach</u>	<u>Reinf</u>
PAL 3	Baseline	27	0.63	0.52	0.07	0.04
	Training	8	6.38	0.50	1.88	2.00
	Feedback	0	----	----	----	----
	Follow-up	0	----	----	----	----
Friend 3	Baseline	27	2.75	3.25	0.00	0.00
	Training	8	1.38	0.00	0.00	0.63
	Feedback	0	----	----	----	----
	Follow-up	0	----	----	----	----
Child 3	Baseline	27	7.67	3.74	0.04	0.70
	Training	8	3.63	4.13	0.00	1.75
	Feedback	0	----	----	----	----
	Follow-up	0	----	----	----	----

PAL 4	Baseline	7	0.57	0.71	0.00	0.43
	Training	11	9.82	0.64	2.82	1.75
	Feedback	4	2.25	3.00	6.50	3.00
	Follow-up	0	----	----	----	----
Friend 4	Baseline	7	0.43	0.14	0.00	0.29
	Training	11	2.18	2.36	1.09	0.46
	Feedback	4	1.50	0.75	2.50	1.50
	Follow-up	0	----	----	----	----
Child 4	Baseline	7	0.43	1.57	0.00	0.00
	Training	11	2.00	6.26	0.00	0.00
	Feedback	4	2.25	1.75	1.00	1.00
	Follow-up	0	----	----	----	----

Mean of trained behavior for phases.

Table 3 (cont.)

<u>Subject</u>	<u>Phase</u>	<u>Day</u>	<u>Init</u>	<u>Resp</u>	<u>Teach</u>	<u>Reinf</u>
PAL 5	Baseline	18	0.89	1.22	0.00	0.06
	Training	13	4.69	1.92	3.31	1.54
	Feedback	11	3.91	1.46	7.91	3.36
	Follow-up	4	1.75	0.25	5.75	4.50
Friend 5	Baseline	17	0.06	0.06	0.00	0.00
	Training	9	0.13	0.67	0.22	0.66
	Feedback	14	1.21	0.64	2.00	1.21
	Follow-up	2	4.00	1.50	1.00	1.50
Child 5	Baseline	18	1.85	5.22	0.56	0.22
	Training	13	4.39	3.85	0.15	0.85
	Feedback	11	5.09	4.46	0.36	1.27
	Follow-up	4	1.00	2.25	0.75	0.50

PAL 6	Baseline	23	2.65	1.17	0.35	0.09
	Training	9	4.78	1.22	3.56	0.89
	Feedback	3	5.60	0.67	4.00	2.33
	Follow-up	0	----	----	----	----
Friend 6	Baseline	21	0.05	0.00	0.00	0.05
	Training	9	2.22	1.33	0.89	1.89
	Feedback	2	7.00	0.00	1.00	1.00
	Follow-up	0	----	----	----	----
Child 6	Baseline	23	2.13	4.57	0.04	0.04
	Training	9	1.11	3.33	0.00	0.00
	Feedback	3	2.67	6.67	0.00	0.00

Means of trained behavior for phases.

Table 4

Summary of Subjective Evaluation by PALs

1. Did you play with any of the prevocational kids before the study?

Yes 4 No 2

2. Do you like to play with any prevocational kids?

Yes 6 No 0

3. Did you know how to play with the prevocational kids before the study?

Yes 0 No 6

4. Before you were trained, how did you feel when you were playing with prevocational kids?

 = 3  = 1  = 0  = 2

5. After you were trained, how did you feel when you were playing with prevocational kids?

 = 5  = 1  = 0  = 0

6. Would you like to do this again?

Yes 5 No 1

7. Do you feel like playing with the prevocational kids"

(a)	always	<u>2</u>
(b)	sometimes	<u>4</u>
(c)	maybe	<u>0</u>
(d)	never	<u>0</u>

Table 4 (cont.)

8. Which of the following did your classmates or old friends do?

<u>3</u>	(a)	join you
<u>1</u>	(b)	ask you what you were doing
<u>1</u>	(c)	make fun of you
<u>0</u>	(d)	ask you to stop playing with prevocational kids
<u>0</u>	(e)	praise you for playing with prevocational kids
<u>1</u>	(f)	jealous of your playing with prevocational kids

9. How do you feel about what you have done?

 = 6
  = 0
  = 0
  = 0

10. Did you show/train any of your friends to play with prevocatonal kids?

Yes 3 No 3

11. What would you like us to do next time? (Circle one)

<u>1</u>	(a)	Train you and your friends to play with prevocational kids.
<u>3</u>	(b)	Train you, then you train your friends to play with prevocational kids.
<u>0</u>	(c)	Train the whole class to play with prevocational kids.
<u>0</u>	(d)	Train your teacher, who then trains the whole class to play with prevocational kids.
<u>0</u>	(e)	Train the whole school to play with prevocational kids.
<u>1</u>		I won't be here.

12. What are the three things you like about playing with prevocational kids?

They are fun.
 I like to teach them new things.
 Because I just like to get new friends.
 Because they are nice.
 They are friendly.
 They are always happy.

Table 4 (cont.)

Soccer, tag, and just goofing around.
Jumping rope sometimes.
Playing on big toy.
Kickball.

13. What are the three things you don't like about playing with prevocational kids?

Sometimes you get tired of them.
You have to miss recess.
I don't like to play the same game over and over again.
There is nothing I don't like about them.
Races, chase, and four square.
They spit up.
They grab you and hurt you.
Punch you.
When Michelle doesn't go in with everybody else.

Table 5

Summary of Subjective Evaluation by Friends

1. Did you play with any of the prevocational kids before the study?

Yes 3 No 3

2. Do you like to play with any prevocational kids?

Yes 5 No 0 Sometimes 1

3. Did you know how to play with the prevocational kids before the study?

Yes 1 No 5

4. Before you were trained, how did you feel when you were playing with prevocational kids?

 = 4  = 1  = 0  = 1

5. After you were trained, how did you feel when you were playing with prevocational kids?

 = 4  = 2  = 0  = 0

6. Would you like to do this again?

Yes 5 No 1

7. Do you feel like playing with the prevocational kids"

(a)	always	<u>3</u>
(b)	sometimes	<u>3</u>
(c)	maybe	<u>0</u>
(d)	never	<u>0</u>

Table 5 (cont.)

8. Which of the following did your classmates or old friends do?

<u>3</u>	(a)	join you
<u>2</u>	(b)	ask you what you were doing
<u>2</u>	(c)	make fun of you
<u>0</u>	(d)	ask you to stop playing with prevocational kids
<u>0</u>	(e)	praise you for playing with prevocational kids
<u>1</u>	(f)	jealous of your playing with prevocational kids

9. How do you feel about what you have done?



10. Did you show/train any of your friends to play with prevocatonal kids?

Yes 5 No 1

11. What would you like us to do next time? (Circle one)

<u>2</u>	(a)	Train you and your friends to play with prevocational kids.
<u>2</u>	(b)	Train you, then you train your friends to play with prevocational kids.
<u>2</u>	(c)	Train the whole class to play with prevocational kids.
<u>0</u>	(d)	Train your teacher, who then trains the whole class to play with prevocational kids.
<u>0</u>	(e)	Train the whole school to play with prevocational kids.

12. What are the three things you like about playing with prevocational kids?

They are fun to play with sometimes.
 It's fun to play with them.
 They're nice to me.
 They're iunny.
 Kickball, swinging, foursquare.

Table 5 (cont.)

They do fun things.
Fun to be around.
They are nice.
They're always cheerful.
They're fun to play with and because they're funny.
They pay attention.
Foursquare, soccer, and big toy.

13. What are the three things you don't like about playing with prevocational kids?

I wish I could be assigned another handicap and to have training.
They hit you, laugh at you, tease you.
I would have liked training..
Play with someone else.
It isn't very fun.
Hard to get them to do things.
Well, we don't get a day off every two or three weeks and it doesn't give us time to play with any of our classmates.

Table 6

Evaluation/Parents of Severely Handicapped Children

1. Did your child tell you about the study?

Yes 4 No 2

2. Did he/she say that he/she liked it?

Yes 5 No 1

3. Did you observe any changes in your child's behavior?

Yes 1 No 5

4. On a scale of 1 through 5, can you rate the behavior you observed?

<u>0</u>	1	very poor
<u>0</u>	2	poor
<u>0</u>	3	fair
<u>1</u>	4	good
<u>5</u>	5	excellent

5. Would you permit your child to do this again?

Yes 6 No 0

6. What did he/she like or dislike about it?

April talked about playing the first part of the year, but doesn't talk about it anymore. No specific names mentioned.

Not verbal enough. When Mom mentioned Jeremy's name, David got all excited.

Played with Melissa and talked to Melissa (no specific activities mentioned) and mentioned Jeremy's name at home.

Jump rope, mentioned playing at school - can't remember which names were mentioned.

Mentioned soccer and other sports he played at school.

Mentioned Tausha's name - no specific games.

Table 6 (cont.)

7. Can you tell us, briefly, the change you observed?

She likes to play jump rope now and will go off and do things without having someone always there to watch her.

May have helped with confidence to initiate activities - but he always was outgoing.

8. In the future, what do you suggest we could do to improve your child's social skills?

Maybe something to help with skills of what to do during work breaks - starting conversations and continuing those conversations.

Needs to improve - gets too aggressive.

Start relating to older children, not just first graders - (dressing, grooming) matching clothes, clothes too tight, short, etc.

Proper behavior on bus, library skills.

Playing games - attention span activities, making friends.

Table 7

Evaluation/Parents of PALs

1. Did your child tell you about the study?

Yes 6 No 0

2. Did he/she say that he/she liked it?

Yes 6 No 0

3. Did you observe any changes in your child's behavior?

Yes 3 No 3

4. On a scale of 1 through 5, can you rate the behavior you observed?

<u>0</u>	1	very poor
<u>0</u>	2	poor
<u>0</u>	3	fair
<u>0</u>	4	good
<u>6</u>	5	excellent

5. Would you permit your child to do this again?

Yes 6 No 0

6. What did he/she like or dislike about it?

Talked about Jan and games they played. Was upset about Jan's seizures and worried about it.
Michelle only wanted to jump rope (a bit frustrated).
Mentioned other things that were going well.
Every night commented on the kids.
One mom commented that prior to the study, her daughter had been afraid to play at a peer's house because that peer had a handicapped brother. After training, though, the daughter was no longer afraid and told her mom, "It's okay now. I'm not afraid any more."

Table 7 (cont.)

7. Can you tell us, briefly, the change you observed?

Been familiar with and has always been very good with
handicapped children.

Table 8

Evaluation/Parents of Friends

1. Did your child tell you about the study?

Yes 6 No 0

2. Did he/she say that he/she liked it?

Yes 6 No 0

3. Did you observe any changes in your child's behavior?

Yes 3 No 3

4. On a scale of 1 through 5, can you rate the behavior you observed?

<u>0</u>	1	very poor
<u>0</u>	2	poor
<u>1</u>	3	fair
<u>0</u>	4	good
<u>5</u>	5	excellent

5. Would you permit your child to do this again?

Yes 6 No 0

6. What did he/she like or dislike about it?

Talked about some of the kids, talks a lot about Doug.
Enjoyed playing with the handicapped kids.
Remembers little things that she talked about, like the
games they play.
Can't remember specifics, but Jeremy has talked about
different things that have happened with the
handicapped kids.
Liked playing games. Mentioned being a little scared
when Jan fell.

Table 8 (cont.)

7. Can you tell us, briefly, the change you observed?

Seems more sensitive to their feelings.

None - she has a handicapped cousin and has been real understanding all along.

Doesn't make fun and more aware that they aren't that different from others.

Discussion

Training nonhandicapped students to play with and assist severely handicapped students greatly increases the percent of time that the two groups actively participated with one another. Furthermore, the training of five students clearly generalized to five of their friends and, at least to some extent, to other nonhandicapped students at recess. These results are extremely important because they form the basis for suggesting that training key students in an elementary school may result in widespread acceptance of and increased social interaction with mainstreamed severely handicapped students.

As discussed in the introduction, just placing severely handicapped students in mainstream situations probably will not result in increased social interaction. Special training programs will most likely be needed to increase positive interactions. The training program used in this study appears to have been very efficient. First, since training a few students clearly generalized to other students, we learned that training need only be applied to a small group, perhaps a select few in each regular elementary class. Second, training only required 15 minutes per day for approximately ten days plus some feedback given at the end of recess periods. For research purposes, students in this study were trained in pairs; however, we recommend that in future applications PALs be trained in small groups of 10 to

15 students. In a school of 600 students, training 75 to 100 students as PALs might result in almost total acceptance of the mainstreamed severely handicapped students and provide 500 to 600 potential playmates. This would be important because rarely would two students, even two nonhandicapped students who are "best of friends," play together all the time. Obviously, having a large number of potential playmates greatly increases the opportunity for social interaction.

Providing positive experiences with severely handicapped students to nonhandicapped students may have far-reaching effects. When elementary students become adolescents and adults, they may become co-workers with or even employers of severely handicapped persons. Having had positive social interactions early in life will likely increase the probability of more positive interactions as adults.

In the analysis of the frequency of initiating, responding, teaching, and reinforcing behavior of the subjects, it was found that prior to training, the PALs and their Friends rarely initiated or responded to the children. As the PALs became trained, the frequency of the trained behaviors substantially increased. The effects of the training generalized to their Friends. When the PALs were trained, the Friends initiated, responded, taught, and/or reinforced the children more; although after training, the PALs infrequently responded to the handicapped children's

initiation. This may mean that once the PALs take control of the social interaction, they need not spend much time initiating or responding.

Of course, in a normal situation, people never respond to all initiations. Teaching new behaviors and reinforcing the appropriate behavior of the children were more important once rapport had been established. When compared to the level of interaction that accrued, a lower frequency of responding did not affect the level of interaction.

Consequently, as subjects interact, there will be a shift in priority toward those behaviors that establish a subject as the play-organizer.

Table 3 shows the extent to which the trained behavior generalized. The data suggest that training few subjects could produce a substantial increase in the behavior of other children. Based on the frequency of initiating and responding of the handicapped children, the data suggest that unless the so-called normal children are trained, there will not be any high level of interaction between the two populations. Summarily, this study seems to support the views of Strain (1983) and Stainback and Stainback (1982), that while we train the severely handicapped children to improve social skills, we must train the nonhandicapped children for generalization and maintenance of social interaction between the two populations.

The social validation data support the PAL/Friend program. Most participants and all of the parents of partici-

pants liked the program and felt that it should be continued.

In summary, it is clear from this project that training peers to play with severely handicapped children works, i.e., increases social interaction. The generalization from PALs to other nonhandicapped students demonstrates that the model is cost-effective. We strongly recommend that this approach be expanded and widely disseminated.

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APPENDIX A
Student Handbook

63

MAKING FRIENDS

A STUDENT HANDBOOK FOR PEERS
OF HANDICAPPED STUDENTS

BRENDA MUDGETT
CHRISTINE A. GASPER
CHUKWUMA S. AHANONU

ILLUSTRATIONS BY: GREG MUDGETT

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MANY CHILDREN AGREE THAT IT IS IMPORTANT TO HAVE CHILDHOOD FRIENDS. BUT SOME CHILDREN DO NOT HAVE ANY. THEY GROW UP WITHOUT ANYONE TO PLAY WITH, TALK TO, OR JUST ENJOY BECAUSE THE OTHER CHILDREN DO NOT LIKE THEM. WOULD YOU LIKE TO PLAY ALONE WHILE OTHER CHILDREN PLAY WITH GOOD FRIENDS? I DON'T THINK IT WOULD BE FUN, WOULD IT?

YOU SEE, WHEN YOU DO NOT HAVE FRIENDS TO PLAY WITH, YOU DON'T KNOW WHAT FRIENDS KNOW. ALSO, YOU DON'T HAVE ANYONE TO HELP YOU WHEN YOU NEED SOME HELP. SOME CHILDREN ARE SLOW TO LEARN. THEY ARE AFRAID OF GETTING HURT SO THEY DO NOT LIKE TO PLAY. SOME CHILDREN DO NOT TALK WELL AND OTHER CHILDREN OVERLOOK THEM. SO, THEY DO NOT PLAY WITH ANYONE. THEY ALSO, MISS OUT ON WHAT OTHER CHILDREN KNOW AND WHAT OTHER CHILDREN DO. BUT THEY NEED TO MAKE FRIENDS TO PLAY WITH. AND THEY DON'T KNOW HOW.

THIS BOOK IS PLANNED FOR CHILDREN WHO WANT TO PLAY WITH OTHER CHILDREN AS FRIENDS. THE BOOK WILL TEACH YOU HOW TO ASK YOUR FRIEND TO PLAY AND HOW TO ANSWER TO YOUR FRIEND'S CALL TO PLAY. DO YOU KNOW THAT FRIENDS ALWAYS FEEL GOOD WHEN YOU TELL THEM ABOUT THE GOOD THINGS THEY ARE DOING. WHEN YOU READ THIS BOOK YOU WILL LEARN HOW TO TELL YOUR FRIENDS GOOD THINGS ABOUT THEM. YOU WILL ALSO LEARN HOW TO TEACH THEM TO MAKE FRIENDS AND HOW TO KEEP GOOD FRIENDS.

TRY TO READ THIS BOOK VERY CAREFULLY. IF YOU DO,
YOU WILL KNOW WHAT YOUR TEACHER TEACHES ABOUT MAKING
FRIENDS WITH OTHER CHILDREN. REMEMBER, TO LEARN, TO
TALK, TO PLAY, AND TO ENJOY, MAKE FRIENDS REMAIN
FRIENDS FOREVER. AT THE END OF YOUR TRAINING, YOU WILL
RECEIVE A CERTIFICATE THAT SHOWS YOU KNOW HOW TO MAKE
FRIENDS WITH OTHER CHILDREN.

ASKING YOUR FRIEND TO PLAY

ASK YOUR FRIEND TO PLAY GAMES THAT YOU LIKE TO PLAY.

*PLAY DIFFERENT KINDS OF GAMES EACH DAY.

MAKE SURE THAT YOU GET YOUR FRIEND'S ATTENTION BEFORE ASKING HIM/HER TO PLAY.

*YOU KNOW YOU HAVE THEIR ATTENTION WHEN THEY ARE LOOKING AT YOU.

CALL YOUR FRIEND BY NAME WHEN ASKING HIM TO PLAY WITH YOU.

*YOU COULD SAY:
"BOBBY, LET'S GO PLAY BALL" OR
"MARY, DO YOU WANT TO PLAY?"



ANSWERING YOUR FRIEND

WHEN YOUR FRIEND ASKS YOU TO PLAY, YOU COULD ANSWER HIM/HER:

- *BY SAYING, "OK. THAT SOUNDS FUN," OR ANYTHING ELSE TO LET YOUR FRIEND KNOW YOU WANT TO PLAY.
- *YOU DON'T ALWAYS HAVE TO SAY YES; BUT BE POLITE WHEN SAYING, "NO."
- *IF YOU DON'T WANT TO PLAY THAT GAME, YOU COULD SUGGEST ANOTHER GAME TO PLAY.

YOUR FRIEND MIGHT NOT ALWAYS ASK YOU TO PLAY WITH HIS/HER VOICE.

- *HE/SHE MIGHT MOTION TO YOU WITH HIS/HER HANDS.
- *IF YOU DON'T UNDERSTAND YOUR FRIEND, ASK HIM/HER TO SAY IT AGAIN, ONLY LOUDER, SLOWER, OR WHATEVER WOULD MAKE IT EASIER TO UNDERSTAND HIM/HER.



REINFORCING AND TEACHING

WHEN YOUR FRIEND DOES SOMETHING GOOD, TELL HIM/HER.

*TELL YOUR FRIEND WHAT THEY DID THAT WAS GOOD:
"KATHY, YOU DID A GOOD SOMERSAULT."
"TERRY, GOOD JOB. YOU HIT THE TARGET."

YOU CAN PRAISE YOUR FRIEND BY:

*PATting HIM/HER ON THE BACK.

*CLAPPING

*"GIVE ME FIVE"

ENCOURAGE YOUR FRIEND WHEN HE/SHÉ IS DOING SOMETHING THAT IS HARD FOR HIM/HER.

*"TAMMY, YOU ALMOST DID IT. TRY IT AGAIN."



IF YOUR FRIEND DOESN'T KNOW HOW TO PLAY A GAME YOU WANT TO PLAY, TEACH HIM/HER.

- *SHOW AND TELL YOUR FRIEND WHAT TO DO. THEY CAN SEE WHAT TO DO BY WATCHING YOU!
- *EXPLAIN THE RULES IN EASY DIRECTIONS. (AND DON'T HAVE TOO MANY RULES.)
- *IF YOUR FRIEND NEEDS MORE HELP, HOLD HIS/HER HANDS, ARMS, OR LEGS TO HELP WITH THE GAME.
- *MAKE SURE YOUR FRIEND IS WATCHING WHEN YOU SHOW HIM/HER HOW TO PLAY THE GAME.



HELPING YOUR FRIEND WITH PROBLEMS

YOUR FRIEND MIGHT NOT ALWAYS BE WELL BEHAVED.
HE/SHE MAY "ACT UP." YOU CAN HELP YOUR FRIEND
BY:

- *LOOKING AWAY FROM HIM/HER UNTIL
HE/SHE STARTS BEING NICE. THEN
PRAISE HIM/HER FOR ACTING NICE.
- *TRYING TO GET HIM/HER TO PLAY
SOMETHING ELSE.
- *TELLING HIM/HER TO SAY, "SORRY."

IF YOUR FRIEND HURTS SOMEONE ELSE OR ACTS LIKE
THEY MIGHT HURT SOMEONE ELSE, THEN YOU SHOULD
GET AN ADULT TO COME AND TAKE CARE OF THE
PROBLEM.

APPENDIX B

Training Manual

TRAINING MANUAL

A Guide for the Teacher or Trainer

The following is a brief day-by-day outline of the concepts that were taught to the nonhandicapped tutors (PALs - Peer Assisted Learning) as they went through training. It accompanies the handbook, "Making Friends, A Student Handbook for Peers of Handicapped Students," and is intended only as a guide. General examples and nonexamples are given. These examples plus more specific examples related to the handicapped child that the PAL was playing with and to instances as they occurred on a daily basis were used during the actual training. It would be appropriate for future trainers to use this as a guide but to also incorporate specific, actual examples into their training of the nonhandicapped tutors.

Two PALs went through training at a time. During a training session, the PALs read the appropriate section of the handbook. The trainers refrained from using the words "tutor" or "handicapped" during all sessions; instead the word "friend" was used. This was in keeping with the presentation in the handbook. At the end of each training sessions the handbook was returned to the trainer. The research design was a multiple baseline across pairs of tutors. It would have biased the study if other PALs read the handbook prior to their training. In the future it would be appropriate to let the tutor keep the handbook and

bring it to each training session. It might help to further enhance the training as something special (the tutor has a handbook that others do not have). Possibly it could also be an enticement to others who see it, thus become interested, and want to participate.

During the training sessions, the PALs were encouraged to ask questions. As interactions between the trainers and the PALs took place, a trust developed that enabled the PALs to ask questions that they might have otherwise been hesitant to ask (e.g., "What can I do when Mary picks her nose?"). It is vital to foster this sense of "trust" in the PALs. It is also equally important to maintain high rates of praise with the PALs for their efforts (e.g., "I really like the way you got Jennifer's attention yesterday when you wanted to ask her to swing."). A trainer needs to be open and honest with the PAL about their questions. In training tutors, one should remember that they too are students and not fellow professionals, but avoid "talking down" to them.

There were several phases in the research study. During the training phase of the study, praise, prompts, or comments were not given to the PAL during the play sessions. These comments were held until the next training session. The feedback phase included praising and prompting during the play sessions. In the future it would be appropriate to include the praising and prompting during the play sessions at the same time that training is being conducted. The trainer would need to be as unobtrusive as possible, but the

closer the reinforcer is delivered to the stimulus, the more powerful it is.

Training took place in the classroom for the severely handicapped students; however, no handicapped students were present during training. The classroom was a mainstreaming program from Utah State University, located within a regular elementary school in Logan School District. One of the trainers was the classroom teacher in the handicapped classroom. The other trainer was a graduate student in special education from Utah State University. Future training could be conducted by either a special educator or regular educator as long as they were familiar with the handicapped students and their needs. Training was conducted at a table around which the two trainers and two PALs sat. Whenever it was necessary for purposes of demonstration or role playing, the training was moved to an open area within the classroom. Training lasted approximately 15 minutes and was conducted about one hour prior to the scheduled play session.

A limited amount of role playing took place. Some PALs needed it and others did not. If, after an explanation of the examples and nonexamples and a discussion of how the PALs would be interacting with the handicapped child, the PAL was still uncertain about his role, then role playing was used. Role playing was also used as a correction procedure after the trainers observed the PAL playing with the handicapped child. If the trainers did not observe the skills that had been taught during the training session or

the inappropriate use of the skills, then role playing was used during the review session on the following day to correct behavior or strengthen the previous presentation. This kept training on a positive note. The PALs were subtly corrected and no major confrontations were necessary.

Play sessions took place on the playground or, during inclement weather, in an activity room located in the basement of the school. Play sessions lasted approximately 30 minutes. During this time, the classroom teacher from the handicapped class supervised both handicapped and nonhandicapped students. On the playground there was also a playground supervisor supervising nonhandicapped students. Observers were also present recording data for purposes of the study. The observers did not interact with any of the students. The PALs were expected to play with their assigned handicapped friend for the entire 30 minutes every day. At no time were they severely reprimanded if they failed to do so. Gentle reminders were given on occasion (e.g., "John, I would really appreciate it if you would play with Joey."). In the future it would be appropriate to remind PALs that they have volunteered to help, but nonhandicapped peers do not play with the same person over and over for the entire recess period and it is unreasonable to expect tutors to be any different with handicapped children.

If the handicapped child refused to play with the PAL, the PALs were instructed to ask another handicapped child to

play. They were to stay within plain view of the assigned handicapped child and after a few minutes return to the handicapped child and again ask him to play. Again, gentle reminders were given to the handicapped child that they should play with their "friend." It was felt, though, that children do have their moods, personalities, etc. whether they are handicapped or not and that they should be respected. If they didn't feel like playing or didn't like someone, they were not forced to play.

DAY 1

- A. Brief introduction of what the PAL will be taught.
 - 1. How to play with handicapped children.
 - 2. What to do when you need help.
- B. Each of the PALs is given the handbook, "Making Friends, A Student Handbook for Peers of Handicapped Students"; ask them to read the introduction; discuss if needed.
- C. Myths about handicapped children; explain to the PALs that there are many things said about handicapped people that just aren't true; discuss the following examples.
 - 1. Handicapped people can't learn or are unteachable.
 - 2. Handicapped children don't like to play.
 - 3. It's (mental retardation) infectious: "You catch it like you do a cold."

4. Ask if they have heard anything else about handicapped people that they may or may not know if it is true (this is one of the sessions that is crucial to developing trust and rapport between PAL and trainer); explain without infringing on the handicapped child's right to confidentiality some of the handicapping conditions found in the classroom.
 5. Tell the PALs they can ask questions any time they want to and you will try and be as open and honest with your answers as possible.
- D. Initiations (Asking Your Friend to Play).
1. Have the PALs read the section, "Asking Your Friend to Play," in the handbook.
 2. Discuss the following major points. Note: In keeping with the presentations in the handbook, refrain from using the words "tutor" and "handicapped." Instead use the word "friend." To avoid misinterpretations and ambiguous references, the words "PAL" and "handicapped child" are used in the following outline. This is for the trainer's benefit. REMEMBER: USE THE WORD "FRIEND."
 - a. Get the handicapped child's attention.
 - I. Call the child by name.
 - II. Look at the child when you are talking to him/her.
 - III. Tap him/her on the shoulder.

NOTE: At one point during training, because the handicapped child was so shy, it was necessary to train a PAL to physically prompt eye contact by gently raising the handicapped child's chin with her finger; or, if the handicapped child was sitting on the floor, to get down on her level while talking to her.

b. Ask him/her to play a game.

- I. Ask the handicapped child to play a game; he might say "no" at first, but keep asking.
- II. Ask him/her to play games that you like to play or ask him/her to play a game that you have observed the handicapped child playing before.
- III. It isn't necessary to play the same game every day.
- IV. If the handicapped child says "no" ask him/her what he would like to play.
- V. If the handicapped child says "no" repeatedly, leave him/her alone for a minute and then come back and try again.
- VI. Give the handicapped child a choice of two games to play to lessen the chance that he will say "no."

E. Ask the PALs to help you generate a list of appropriate games.

1. Rope jumping, board games, gymnastics, four-square, using the playground equipment, etc.

a. Offer to teach the PALs games that might be appropriate to play or ones that they do not know.

2. Identify specific games that each particular handicapped child enjoys playing.

F. Suggested examples.

1. Discuss the following examples with the PALs; practice or role play these examples and other child-specific ones several times; rotate the roles of the handicapped child and the PAL. In the following examples, parentheses () will refer to the handicapped child's nonverbal behavior and brackets [] will refer to the PAL's nonverbal behavior.

a. [Establish eye contact.] "Mary, do you want to play with me?"

b. [Establish eye contact, hold out jump rope in hand.] "Susie, do you want to jump rope with me?"

c. [Establish eye contact.] "Don, would you like to play football or play on 'The Big Toy' with me?"

- d. [Establish eye contact, gesture with hand to signal "come with me."] "Come on, Joe, let's go play."
- e. [PAL observes handicapped child sitting on the sidelines watching the others play, establishes eye contact.] "Jamie, would you like me to teach you to play the game?"
- f. [PAL approaches handicapped child who is jumping rope, waits for handicapped child to finish, establishes eye contact.] "Wow, Ginny, you are really good at jumping rope. Will you jump rope with me?"

G. Nonexamples.

- 1. Discuss the following nonexamples. Do not role play any of them. Try to keep the session on a positive note.
 - a. No name-calling. ("Hey, retard. You wanna play football?")
 - b. Don't ask the handicapped child to play a game that is obviously too hard for him to understand the rules and play.
 - c. Remember: You are a role model for the handicapped child. Do not break playground rules.

DAY 2

A. Review initiations.

1. Talk about what they did the previous day while playing with their friend; good experiences; problems; any questions. Give specific praise for appropriate things that you observed during the previous play session. Role play if necessary.

B. Responding to initiations (Answering Your Friend).

1. Have the PALs read the section, "Answering Your Friend," in the handbook.
2. Discuss the following major points. Note: In keeping with the presentations in the handbook, refrain from using the words "tutor" and "handicapped." Instead use the word "friend." To avoid misinterpretations and ambiguous references, the words "PAL" and "handicapped child" are used in the following outline. This is for the trainer's benefit. REMEMBER: USE THE WORD "FRIEND."
 - a. When a handicapped child asks you to play, you should answer him/her just like you do any friend.
 - b. When answering a handicapped child, look at him/her.
 - c. You don't always have to say "yes," but be polite when saying "no."

- d. When you do say "no," give several suggestions for alternate activities that you would enjoy playing.
- e. Do not "talk down" to the handicapped child, but keep it simple.
- f. Ignore "baby talk" if used by the handicapped child.
- g. If you don't understand the handicapped child, try having him/her repeat the sentence or say is slower; as a last resort, bring your friend to a staff member and ask her assistance in decoding what has been said.

C. Suggested examples.

- 1. Discuss the following examples with the PALs; practice or role play these examples and other child-specific ones several times; rotate the roles of the handicapped child and the PAL. Ask the PALs to help you think of some examples. In the following examples, parentheses () will refer to the handicapped child's nonverbal behavior and brackets [] will refer to the PAL's nonverbal behavior.
 - a. (Tom pulls on your sleeve and tries to pull you toward the playground equipment.) [PAL answers] "Tom, do you want me to play on 'The Big Toy' with you?"

- b. (Handicapped child approaches you, stops, establishes eye contact, and smiles at you.)
[PAL answers] "Hi, Ginny. Would you like to play with me?"
- c. (Handicapped child says) "Hi, Richie. Can I play with you?" [PAL answers] "Sure, Danny. Let's go."
- d. (Handicapped child approaches you and signs "play.") You do not understand sign language. [Take the handicapped child with you to a staff member and have her interpret the sign for you.] Note: If there are handicapped children who use manual signs or some other form of nonvocal communication, then it will be necessary to train the PALs to use and understand the appropriate vocabulary.
- e. (Handicapped child approaches and says) "Hi, Susie. Can I play four-square with you?" [Susie knows that the handicapped child can't play well enough to play with the others and there will be problems.] "Not right now. Stand here and watch until I finish my turn and then we'll go play our own game. Ok?"

D. Nonexamples.

- 1. Discuss the following examples. Do not role play any of them. Try to keep the session on a positive note.

- a. (Handicapped child approaches and says) "Hi, Susie. Can I play four-square with you?"
[PAL answers] "No. Go away. You're not good enough to play with us."
- b. (Handicapped child approaches and says something and it is so garbled that it can't be understood.) [PAL says] "Aw gee, you're dumb. I can't even understand what you said" [or ignores the handicapped child].

DAY 3

A. Review initiations and responding.

- 1. Talk about what they did the previous day while playing with their friend; good experiences; problems; any questions. Give specific praise for appropriate things that you observed during the previous play session. Role play if necessary.

B. Teaching the handicapped child a new game.

- 1. Have the PALs read the section, "Teaching," in the handbook.
- 2. Discuss the following major points. Note: In keeping with the presentations in the handbook, refrain from using the words "tutor" and "handicapped." Instead use the word "friend." To avoid misinterpretations and ambiguous references, the words "PAL" and "handicapped child" are used in the following outline. This is for the trainer's

benefit. REMEMBER: USE THE WORD "FRIEND."

- a. If the handicapped child doesn't know how to play a game, you can teach him/her.
- b. The first way to teach the handicapped child how to play is to tell him/her what he is supposed to do and use gestures to help him understand, or point to where he should go.
- c. If the handicapped child does not understand what you tell him/her to do, then you can show him what he should do.
- d. Another way to teach, if telling and showing doesn't work, is to make him/her play by putting his arms, legs, etc. in the right place or by guiding his body in the action.
- e. It's important to remember that when you teach, teach the easiest way first and if that doesn't work, then use methods that are harder. Note: It may also be necessary to teach the PALs the concepts of graduated guidance or shaping and fading of prompts.
- f. Teach games that are age-appropriate; games you like to play. Stay away from "baby games."
- g. Make sure that you have the handicapped child's attention before attempting to teach.

- h. You may have to demonstrate the game slowly or do it several times before the handicapped child tries it.
- i. Encourage the handicapped child to try the game on his own when you think he/she will be successful.

C. Suggested examples.

- 1. Discuss the following examples with the PALs; practice or role play these examples and other child-specific ones several times; rotate the roles of the handicapped child and the PAL. In the following examples parentheses () will refer to the handicapped child's nonverbal behavior and brackets [] will refer to the PAL's nonverbal behavior.
 - a. (Handicapped child watches PAL jumping rope.) [PAL jumps rope slowly.] "See how I'm jumping rope. You swing the rope over your head and when it gets to your feet, you jump over it."
 - b. (Handicapped child wants to go down the slide.) [PAL points to the steps on the slide.] "See those steps. Climb up to the top and then slide down. I'll catch you."
 - c. [Two of the PAL peers are turning a long jump rope. The PAL holds the handicapped child's hand.] "Jump."

- d. [Two of the PALs' peers are turning a long jump rope. The PAL stands beside the jump rope but is not jumping.] (The handicapped child is jumping rope.) [The PAL says] "Jump, jump."
- e. The handicapped child wants to try something that is too hard for him. The PAL should offer him a choice of something else to do. (The handicapped child approaches the PAL and asks for assistance on the horizontal bar.) "Gee, Tommy, I think that's a little too hard for you. Let's go down the slide."
- f. The handicapped child wants to try something that he can probably do, but adult supervision would make it safer. (The handicapped child approaches the PAL and asks for assistance in standing on his/her head.) [The PAL isn't strong enough to hold the handicapped child up, but knows that he/she can do it.] "Ok, Micky, but let's go get Mrs. Jones to help us. I'm not big enough to do that by myself."

D. Nonexamples.

- 1. Discuss the following nonexamples. Do not role play any of them. Try to keep the session on a positive note.

- a. The handicapped child wants to play football. The PAL immediately starts to physically prompt him/her to pass the ball without first seeing if telling or showing would be adequate.
- b. The handicapped child asks the PAL to show him how to go on the monkey bars. The PAL says, "No, I'm not going to show you."
- c. The handicapped child wants to attempt a difficult gymnastics stunt. The PAL allows this without getting assistance from a staff person.

DAY 4

- A. Review initiations, responding, and teaching.
 - 1. Talk about what they did the previous day while playing with their friend; good experiences; problems; any questions. Give specific praise for appropriate things that you observed during the previous play session. Role play if necessary.
- B. Reinforcing the handicapped child.
 - 1. Have the PALs read the section, "Reinforcing or Rewarding Your Friend," in the handbook.
 - 2. Discuss the following major points. Note: In keeping with the presentations in the handbook, refrain from using the words "tutor" and "handicapped." Instead use the word "friend." To avoid

misinterpretations and ambiguous references, the words "PAL" and "handicapped child" are used in the following outline. This is for the trainer's benefit. REMEMBER: USE THE WORD "FRIEND."

- a. Praise the handicapped child when he does something good or right. Always try to establish eye contact when delivering praise.
 - I. Use words like "nice going," "good job," or "all right."
 - II. Be specific when praising; tell the child exactly what he/she did right (e.g., "David, you threw the ball far").
 - III. Praise does not have to be verbal. It can be nonverbal, like hugging or a pat on the back.
 - IV. Make sure the amount of praise fits what the handicapped child accomplished. Don't mock him/her because he will know when he has done well.
- b. Encourage the handicapped child to do it again or better.
 - I. If the handicapped child is having a hard time doing something, encourage him. Use words like "keep going," "keep trying," "you are doing so good," or "you're trying so hard."

II. Be specific when encouraging; "You're trying so hard to get the ball. Keep going."

III. Encouragement can also be nonverbal.

C. Suggested examples.

1. Discuss the following examples with the PALs; practice or role play these examples and other child-specific ones several times; rotate the roles of the handicapped child and the PAL. In the following examples, parentheses () will refer to the handicapped child's nonverbal behavior and brackets [] will refer to the PAL's nonverbal behavior.

- a. (Handicapped child goes across the monkey bars for the first time without falling.)
[PAL says] "Wow, Jenny, look at you. You went all the way across the monkey bars without falling."
- b. (Handicapped child is coming down the slide.)
[PAL smiles at handicapped child, pats him on the back when he gets to the bottom.]
- c. (Handicapped child is involved in football scrimmage. Handicapped child makes tackle.)
[PAL gives handicapped child "high five."]
"Great tackle, Don."
- d. (Handicapped child is trying very hard to learn a new game.) [PAL says] "I sure do

like the way you are trying so hard. You're going to get it."

- e. (Handicapped child is trying to do a cartwheel.) [PAL says] "You can do it." [Gives him/her a hug when he has done the cartwheel.]

D. Nonexamples.

- 1. Discuss the following nonexamples. Do not role play any of them. Try to keep the session on a positive note.

- a. (Handicapped child tries very hard and is successful at doing something he has never done before.) [PAL ignores behavior.] Note: It may be necessary to explain to the PALs that reinforcing a behavior increases the chances that it will reoccur.
- b. (Handicapped child tries very hard and does something fantastic.) [PAL shrugs shoulders, avoids eye contact.] "Ah, ok."
- c. (Handicapped child has been doing perfect somersaults now for about two weeks.) [PAL says] "Wow, what a terrific somersault." [Gives big hug to handicapped child.]

DAY 5

- A. Review initiating, responding, teaching, and reinforcing.

1. Talk about what they did the previous day while playing with their friend; good experiences; problems; any questions. Give specific praise for appropriate things that you observed during the previous play session. Role play if necessary.
- B. What to do when your friend is having a problem.
(Helping Your Friend With Problems.)
1. Have the PALs read the section, "Helping Your Friend With Problems," in the handbook.
 2. Discuss the following major points. Note: In keeping with the presentations in the handbook, refrain from using the words "tutor" and "handicapped." Instead use the word "friend." To avoid misinterpretation and ambiguous references, the words "PAL" and "handicapped child" are used in the following outline. this is for the trainer's benefit. REMEMBER: USE THE WORD "FRIEND."
 - a. Identify some of the problems that you know the handicapped child has and might also be a problem in a play situation. If the behavior management techniques used are only properly administered by a staff member, identify those targeted behaviors and advise the PALs to locate a staff member to handle the problem. If the targeted behavior can be controlled by a PAL, teach him/her to use the appropriate technique.

- b. If the handicapped child starts "acting-out," the PAL should look away from him/her until he starts acting appropriately, then praise him for acting right. This is called ignoring. It is not appropriate to ignore serious misbehaviors. If ignoring doesn't work within a minute, then something else should be tried.
- c. While ignoring a misbehaving handicapped child, the PAL could turn his attention to someone else. Be sure and loudly praise the other child. Stay within reach of the handicapped child. Chances are the handicapped child will behave so that he/she can have your attention too. Note: It might be necessary to explain that misbehavior is just another attempt to gain attention, even though it is negative.
- d. Try to get the handicapped child to do something else. Encourage him/her to start a game or join you in another game already in progress.
- e. If the handicapped child does something like hitting, pushing, etc., but the other child is not really hurt, have him/her say, "sorry." If he refuses to apologize, contact

a staff person.

- f. If the handicapped child is hurting someone or acts like he/she is going to hurt someone, get help from a staff person. Before going to get help, the PAL may want to verbally try and stop the inappropriate behavior. It would not be a good idea for the PAL to physically get involved in the fight.

C. Suggested examples.

1. Discuss the following examples with the PALs; practice or role play these examples and other child-specific ones several times; rotate the roles of the handicapped child and the PAL. In the following examples, parentheses () will refer to the handicapped child's nonverbal behavior and brackets [] will refer to the PAL's nonverbal behavior.
 - a. (Handicapped child starts burping.) [PAL ignores behavior. When handicapped child stops, PAL says] "I sure like it when you have good manners."
 - b. (Handicapped child is on slide. Pushes some other child out of his/her way.) [PAL guides handicapped child to other child who was pushed.] "Don, say you're sorry. You aren't supposed to push people." (Handicapped child says) "Sorry."

- c. (Handicapped child has another child down on the ground and is punching him/her in the stomach.) [PAL quickly says] "Stop." [PAL races to get staff person.]

D. Nonexamples.

- 1. Discuss the following nonexamples. Do not role play any of them. Try to keep the session on a positive note.
 - a. (Handicapped child does something inappropriate.) [PAL grabs handicapped child by shoulders, shakes him, and says] "You'd better not do that again."
 - b. (Handicapped child burps.) [PAL laughs at behavior.]

ADDITIONAL DAYS

Additional days may be necessary to review and reinforce the PAL's behavior. Conduct these sessions just like the previous ones. Reinforce the PAL with praise, role play situations if appropriate, and discuss problems.

APPENDIX C

Observer Training Materials

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DATA COLLECTION PROCEDURES

There will be a daily 15-minute observation during the 30-minute recess. Data will be collected using whole-interval technique (Kazdin, 1982) utilizing 10-second observation and 5-second record intervals. The observers will receive signals from prerecorded cassette tape via earphones telling them when to begin and end each interval. When they hear the "time" signal it means the beginning of the (next) interval and they should have completed recording the behavior observed in the previous interval.

The observer will notice that the observation form consists of seven 10-second blocks for the "active participation" section and sixteen 10-second blocks for the "frequency" section. Both sections consist of four categories each. The active participation will be recorded when the student engaged in an activity for the full 10-second interval. Any activity that begins in the middle of an interval or that ends before the end of an interval will not be recorded. The record signal tells the end of the interval, and each observer is required to record only the active participation. In the frequency section, the number of times each student performs the behavior will be recorded immediately for each interval. For instance, if the nontarget nonhandicapped student responded three times to different students within the 10-second interval, the observer will immediately record thus /// in the response box for the nontarget nonhandicapped. The frequency section requires continuous immediate recording and stops when the "record" signal is heard.

The intent of this study is to accurately represent the pattern of social interactions which naturally occurs between the handicapped and nonhandicapped students. During data collection, each observer will be assigned three specific students (one handicapped target, one nonhandi-

capped target, and one nonhandicapped nontarget). The observers will be rotated daily, i.e., the observers will not observe the same three assigned students on consecutive days. The observers will collect data on these students relative to the behavior of all the students on the playground/playroom. It is assumed that four groups of students will be on the playground during every 30-minute recess (see flow chart). These groups of students are as follows:

1. Handicapped Target (Hand.T):

This group will consist of six handicapped students who have been selected as subjects for the study. One handicapped student will be assigned to each observer daily in a rotational fashion.

2. Handicapped Nontarget (Hand.NonT):

This group of students will not directly participate in the study; rather, their behavior as it affects the target handicapped and nonhandicapped students will be recorded. None of them will be assigned to any observer.

3. Nonhandicapped Target (NonH.Tar):

Six nonhandicapped students have been identified to receive sequential training. This group will be paired with one handicapped target and one nonhandicapped nontarget student. It is anticipated that these three students will always maintain close proximities during the 30-minute recess. Each of them will be assigned to each observer.

4. Nonhandicapped Nontarget (NonH.NonT/NHNTar):

This group will be made up of six selected students from the general group of nonhandicapped nontarget students. One NHNTar stu-

dent will be assigned to be observed relative to the behavior of the nonhandicapped and handicapped target students.

5. Other Nonhandicapped Nontarget (Other NonH):

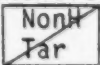
The group is made up of the remaining students who will incidentally interact with the above four groups of students. This group is difficult to specify because the students will be dropping in and out of the scene whenever they like. However, it is assumed that most of them may not interact with the targeted students on a continuous basis. Therefore, the observers do not need to make special efforts to recognize each of them; rather, study the physical features of the three targeted students. This will enable you to easily isolate the three targeted students.

Symbols

	<u>Represents</u>
 = a slash	The behavior the assigned students engaged in.
 = a circle	The behavior the unassigned students engaged in.
 = a slash & a circle	The behavior the assigned and unassigned students engaged in.

How to Use the Symbols

Active Participation Section:

1. For the assigned and unassigned students to be coded as actively participating, they must be engaged in the activity for the entire 10-second interval.
2. If the assigned target handicapped student is actively participating with the assigned target nonhandicapped student, the observer would slash the NonHTar box, thus  for the target handicapped row one,

and also would slash the HanTar box, thus

Hand
Tar

 for the nonhandicapped target, row two. If the participation is with an unassigned nonhandicapped target it would be scored thus

NonH
Tar

 for the handicapped target student, row one.

3. Active participation is not scored between assigned handicapped target and unassigned handicapped target. Also, participation is not scored between nonhandicaps - target, nontarget, assigned, or unassigned.
4. Nonhandicapped assigned target and assigned nontarget playing with assigned and unassigned handicapped target, or handicapped nontarget should be scored as follows:

Assigned handicapped target is scored with a slash, row two, thus

Hand
Tar

, unassigned handicapped target is scored with a circle, row two, thus

Hand
Tar

, and handicapped nontarget is scored with a circle, row two, thus

Hand
NonTar

 (NOTE: Only circles can be scored under the heading handicapped nontarget, since none of these students are ever assigned.)

5. The

NonH
NonTar

 box, row one, is used to score active participation between nonhandicapped, nontarget assigned and unassigned. (Unassigned refers to all other students not designated as participants in the study.)

The box would be slashed if the assigned handicapped target is playing with your assigned nonhandicapped nontarget, thus

NonHand
NonTar

. The box would be circled if the assigned handicapped target is playing with another student designated as the other nonhandicapped nontarget, thus

NonHand
NonTar

.

6. Nonhandicapped nontarget who are unassigned to you, but assigned to others are scored with a circle on row one:

NonHand
NonTar

 (they become

part of the group of students labeled "other").

Frequency Section

1. Tally marks are scored for each occurrence of initiation, response, teaching, and reinforcement involving a handicapped student within each 10-second interval (e.g., if your assigned nonhandicapped target initiates to your assigned handicapped target, the observer would score one mark in the Init box, row two, for the nonhandicapped target, thus ☐ / , two marks for two initiations, etc.
2. No initiation would be scored for an unassigned nonhandicapped target or nontarget (not including those students known as "other" nonhandicapped), but if the assigned handicapped target responds to that initiation, the observer would score one mark in the response box, row one, for the handicapped target, thus ☐ / .
3. Initiations, responses, teaching interactions, and reinforcement to or from an adult are not scored.
4. Initiations by unassigned target handicapped made toward one of your assigned handicapped or nonhandicapped students are not scored.
5. Initiations, responses, teaching interactions, and reinforcement between nonhandicapped students, target and nontarget, are not scored.
6. Initiations, responses, teaching interactions, and reinforcement toward your assigned handicapped target made by a student designated as "other" nonhandicapped nontarget are scored in row four.

EXPLANATION OF OBSERVATION CODES

A. Participation

1. Active participation (AP) The target student, upon joining the group, plays the game in progress. For instance, a peer calls out, "John, let's play ball" and John responds in the affirmative, and the ball is thrown to him, and he throws it back.

Active participation can occur in four ways: with a trained nonhandicapped (APNTr) peer, with an untrained nonhandicapped peer (APNur), with a handicapped peer (APH), or with any adult (APAdt).

2. Passive participation (PP) The target child affirms initiation, but stands aside observing the group (i.e., orienting his/her head in the direction the ball is thrown). For example, "John, come play ball" John responds, "OK," then the student stands with the others in the group but never plays.

Passive participation can also occur in three ways: with a trained nonhandicapped peer (PPNTr), with an untrained nonhandicapped peer (PPNur), or with a handicapped peer (PPH).

3. Solitary play (Sol PL) The target child is playing by him/herself approximately 5 feet away from the group and ignoring everybody else. For example, Sue is sitting on the ground, making designs in the dirt or stacking rocks, or playing with a doll, not interacting with any other children.

B. Social Initiation (Init)

Initiation is a student beginning a social interaction with another student; for instance, calling on a student to play with him/her. A social initiation can be either verbal or nonverbal.

- a. Initiations by a handicapped child are recorded in the top section designated "Handicapped."
- b. Initiations by nonhandicapped children are recorded in the bottom section designated "Nonhandicapped."

C. Responding to Initiation (Resp)

After an initiation has been made by a peer, the target student responds (verbally or nonverbally) by agreeing or declining to participate in the interaction. For example, a peer invites a target student to join an activity with him/her or a group, and the target student joins the activity within approximately 5 seconds after the last word of the invitation.

- a. Responses by a handicapped child are recorded in the top section.
- b. Responses by nonhandicapped children are recorded in the bottom section.

D. Negative Interactions (Inap)

1. Negative interactions, verbal or nonverbal, are recorded as "Inap," standing for inappropriate.
 - a. Verbal - demeaning or belittling statements directed toward a student, e.g., teasing or name-calling.
 - b. Nonverbal - when a student hits, kicks, pushes another student, or uses an object to hurt the student.
2. Negative interactions are recorded in the top section if by a handicapped child, or in the bottom section if by a nonhandicapped child.

E. Modeling/Demonstration

1. Physically demonstrating how to play a game or emit an appropriate behavior, e.g., a nonhandicapped child stands behind a handicapped child to help him hold and swing a baseball bat.
2. This is recorded in the bottom section in the box "Demo."

F. Prompting

Explaining to a handicapped child how to do an activity. For example, "John, make a fist with the dice in your palm, then drop the dice on the table." This is verbally prompting and assisting the handicapped student to perform. This would be recorded in the bottom section in the box "Prompts."

G. Reinforcing

Verbally praising and/or physically complimenting (hugging or patting) the handicapped students, e.g., "Hey, Bobby, you did a good job throwing that ball." This would be recorded in the bottom section in the box "Reinf."

Within the "Nonhandicapped" section, there are two boxes: "Tr" and "NT." These stand for trained (Tr) and nontrained (NT). When marking this bottom section always be sure to mark either Tr or NT so it will be clear who was doing the interaction.

OBSERVER PROCEDURES

1. Check materials.

Before going to observational setting, make sure you have the following materials: (a) observation forms, obtained from coordinator, (b) two sharpened pencils, and (c) cassette recorder, tape, and earphones.

2. Check in with school secretary.

Follow the established rules regarding visiting personnel if you are not a member of the school staff.

3. Choose an advantageous observation location.

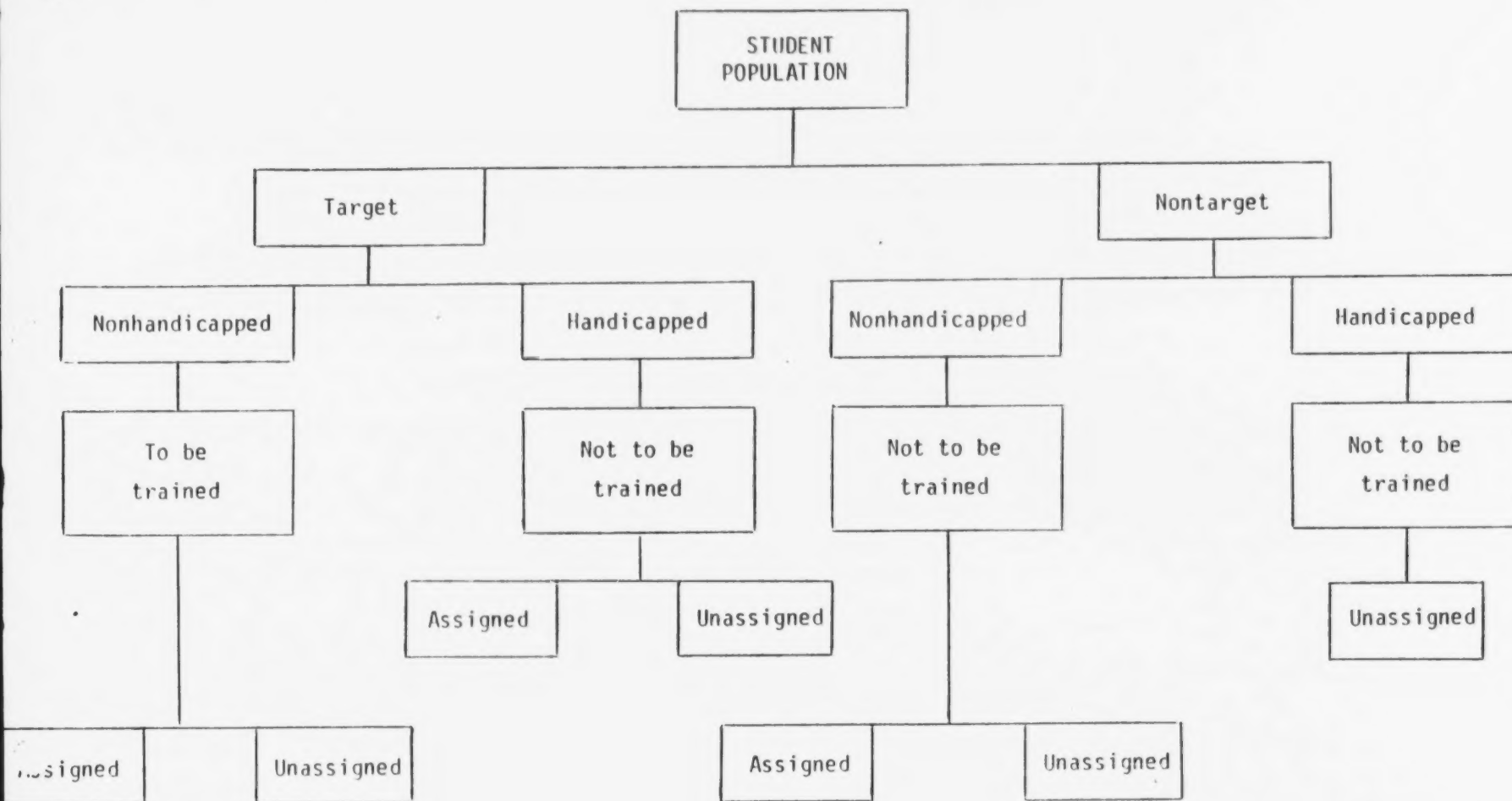
Position yourself so that you can observe what the child is doing and hear what he/she is saying without your attracting undue attention. Don't interfere with the regular playground routine. If you find that you cannot see what is happening, move closer. Do not stare at the child, but instead check his/her behavior out of the "corner of your eye." The student's unawareness of your observation will increase the likelihood that the data you obtain will reflect his/her usual behavior.

4. Adjust to the playground before observation.

Get a "feel" for the playground. Locate the target children involved in the study.

5. Do not interact with children.

If the children know you, a short greeting is expected. However, interaction should be kept to a minimum. No interaction shall take place with any children during data collection.



A flow chart showing student population on the playground/playroom.

Observer: _____ Date: _____

School: _____ Condition: _____

Time: Stop _____ Start _____ * _____ Total _____

Students	ACTIVE PARTICIPATION				FREQUENCY			
	Hand Tar.	Hand NonT	NonH Tar.	NonH NonT	Init	Resp	Teach	Reinf
10 sec.								
1. Hand.T								
2. NonH.T								
3. WHH.Tar								
4. Other NonH.								
20 sec.								
1. Hand.T								
2. NonH.T								
3. WHH.Tar								
4. Other NonH.								
30 sec.								
1. Hand.T								
2. NonH.T								
3. WHH.Tar								
4. Other NonH.								
40 sec.								
1. Hand.T								
2. NonH.T								
3. WHH.Tar								
4. Other NonH.								
50 sec.								
1. Hand.T								
2. NonH.T								
3. WHH.Tar								
4. Other NonH.								

Students	ACTIVE PARTICIPATION				FREQUENCY			
	Hand Tar.	Hand NonT	NonH Tar.	NonH NonT	Init	Resp	Teach	Reinf
10 sec.								
1. Hand.T								
2. NonH.T								
3. WHH.Tar								
4. Other NonH.								
20 sec.								
1. Hand.T								
2. NonH.T								
3. WHH.Tar								
4. Other NonH.								
30 sec.								
1. Hand.T								
2. NonH.T								
3. WHH.Tar								
4. Other NonH.								
40 sec.								
1. Hand.T								
2. NonH.T								
3. WHH.Tar								
4. Other NonH.								
50 sec.								
1. Hand.T								
2. NonH.T								
3. WHH.Tar								
4. Other NonH.								

BEST COPY AVAILABLE

Observer: _____ Date: _____

School: _____ Condition: _____

Time: Stop _____ Start _____ * _____ Total _____

Students	ACTIVE PARTICIPATION				FREQUENCY			
	Hand Tar.	Hand NonT	NonH Tar.	NonH NonT	Init	Resp	Teach	Reinf
10 sec.								
1. Hand.T								
2. NonH.T								
3. WHH.Tar								
4. Other NonH.								
20 sec.								
1. Hand.T								
2. NonH.T								
3. WHH.Tar								
4. Other NonH.								
30 sec.								
1. Hand.T								
2. NonH.T								
3. WHH.Tar								
4. Other NonH.								
40 sec.								
1. Hand.T								
2. NonH.T								
3. WHH.Tar								
4. Other NonH.								
50 sec.								
1. Hand.T								
2. NonH.T								
3. WHH.Tar								
4. Other NonH.								

Students	ACTIVE PARTICIPATION				FREQUENCY			
	Hand Tar.	Hand NonT	NonH Tar.	NonH NonT	Init	Resp	Teach	Reinf
10 sec.								
1. Hand.T								
2. NonH.T								
3. WHH.Tar								
4. Other NonH.								
20 sec.								
1. Hand.T								
2. NonH.T								
3. WHH.Tar								
4. Other NonH.								
30 sec.								
1. Hand.T								
2. NonH.T								
3. WHH.Tar								
4. Other NonH.								
40 sec.								
1. Hand.T								
2. NonH.T								
3. WHH.Tar								
4. Other NonH.								
50 sec.								
1. Hand.T								
2. NonH.T								
3. WHH.Tar								
4. Other NonH.								

OBSERVATION SCHEDULE

Date										
Pair 1										
Eric & Richard Jeremy (4th grade)										
David & Jeremy Mike (5th grade)										
Pair 2										
Michelle & Melissa Tiffany										
Virginia & Shonnie Sherry										
Pair 3										
Jan & Tarsha LauraLee										
April & Jennifer Jennifer										

COMMENTS _____

OBSERVATION SCHEDULE

Date										
Pair 1										
Eric & Richard Jeremy (4th grade)										
David & Jeremy Mike (5th grade)										
Pair 2										
Michelle & Melissa Tiffany										
Virginia & Shonnie Sherry										
Pair 3										
Jan & Tarsha LauraLee										
April & Jennifer Jennifer										

COMMENTS _____

Condition _____ Observer _____ Date _____

No. of boxes _____	Active Participation		Frequency			
	Score	%	Init	Resp	Teach	Reinf
1. Hand.T _____						
Hand.NonT. _____						
NonH.Tar.: Assigned						
Unassigned						
NonH.NonT: Assigned						
Unassigned						
2. NonH.T _____						
Hand.Tar.: Assigned						
Unassigned						
Hand.NonT. _____						
3.NHNTar. _____						
Hand.Tar.: Assigned						
Unassigned						
Hand.NonT. _____						
4. Other NonH. _____						

Condition _____ Observer _____ Date _____

No. of boxes _____	Active Participation		Frequency			
	Score	%	Init	Resp	Teach	Reinf
1. Hand.T _____						
Hand.NonT. _____						
NonH.Tar.: Assigned						
Unassigned						
NonH.NonT: Assigned						
Unassigned						
2. NonH.T _____						
Hand.Tar.: Assigned						
Unassigned						
Hand.NonT. _____						
3.NHNTar. _____						
Hand.Tar.: Assigned						
Unassigned						
Hand.NonT. _____						
4. Other NonH. _____						